

# American Artisan

THE WARM AIR HEATING  
AND SHEET METAL JOURNAL  
FOUNDED 1880

Tests have proved that copper-bearing steel lasts longer under atmospheric corrosion. Hence, Inland Copper Alloy Steel Sheets were used for this super-service station at Abilene, Texas.



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Sheets Bars Plates  
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## STEEL

Rails Track Accessories  
Bands Rivets Billets

SEPTEMBER 28, 1931

# The Words "Air Conditioning" Are Being Used to Cover Quite a Lot of Territory . . .

And we, here at the home of the WEIR, have been trying to interpret them in the best manner possible.

We consider the field that is opened to Warm Air Heating through this higher, greater, new development as putting our Industry in a most enviable position.

We are convinced that any system that falls short in any respect of performing these four certain, definite functions cannot properly be called a "Conditioned Air" system:

- (1) Warms the air to the desired temperature in any weather.
- (2) Provides proper relative humidity for health as well as comfort.
- (3) Cleanses the circulating air of dirt and dust particles.
- (4) Constantly circulates and re-circulates all the air throughout the home when wanted all through the year.

## The Weir "Conditioned Air" Unit Does All These Things...and Does Them Well!

A handsome brochure in full color, presenting our story in detail, will help you to further appreciate the business that Air Conditioning puts before you. It is free for the asking.

**THE MEYER FURNACE COMPANY**

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ILLINOIS

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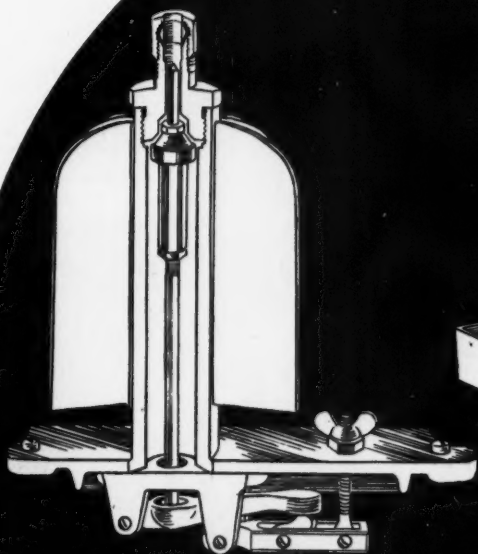
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At last...a valve that will not "lime up"

*sell the*  
**HUMIDIFIER**  
*that gives lasting*  
*satisfaction*



Cut-a-way above shows compound lever action valve with fin cooled body, the secret of the success of this device. This valve eliminates fouling and "liming up".



Model B (above) fits all furnaces and is adjustable to humidify any home containing from 5 to 15 rooms. Easily installed through side of furnace.

**EVERYBODY** is talking about proper air-conditioning. It's the new sales idea which is bringing BIG opportunities to furnace dealers. Don't wait for your competitor to cash in . . . Get your share of this humidifier business now!

Investigate the new COLUMBUS HUMIDIFIER . . . the humidifier which requires no servicing, and which always gives satisfaction. This humidifier is the *only* one that can use the compound lever action valve which *positively eliminates dripping, and fouling up.*

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**Address**

**COLUMBUS  
HUMIDIFIER  
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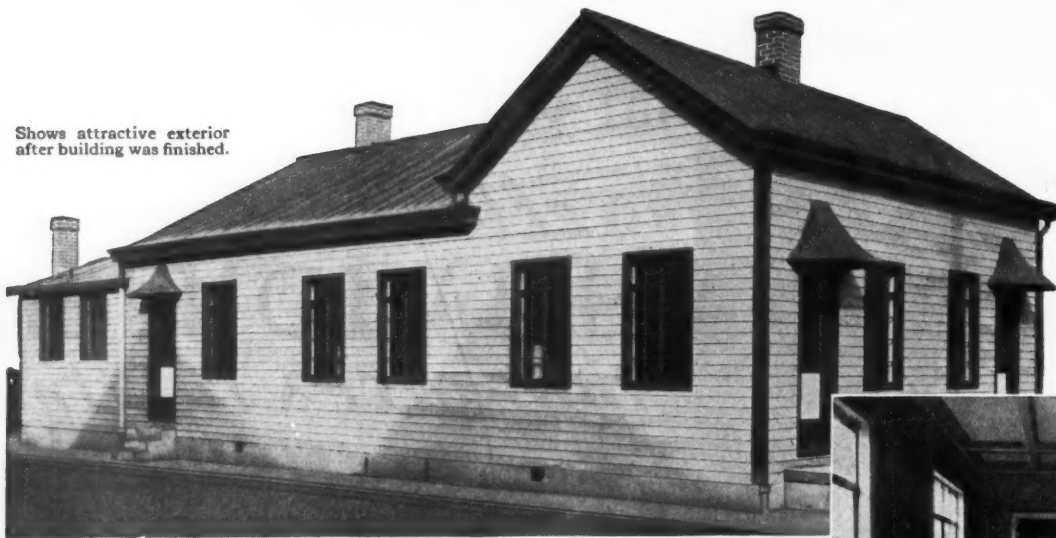
**ONE EAST 5th AVENUE  
COLUMBUS, OHIO**



Model A (above) is the humidifier that fits most warm air heated homes of from 5 to 7 rooms. It may be quickly and easily installed through top of furnace.

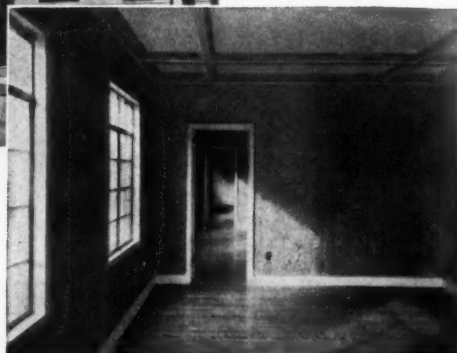


Shows attractive exterior after building was finished.



Top photo shows cosy, home-like interior after it was rebuilt.

Bottom photo shows dilapidated condition of building before reconstruction.



## ALL-STEEL *Bungalow* Shows Economy and Lasting Quality of



METAL  
BUILDING  
MATERIALS

THIS all-steel home, in Newport, Kentucky, is a unique illustration both of the practical advantages and artistic possibilities of GLOBE Sheet Metal Building Products. It demonstrates also the profitable business awaiting the contractor who builds or rebuilds with GLOBE materials.

The building, formerly a dilapidated frame structure, was demolished completely, excepting roof and wood frame, and reconstructed — inside and out — with GLOBE products. The roof, which had been covered long years before with GLOBE metal roofing, was the only exposed part that had withstood the ravages of time and weather.

GLOBE building materials are carefully fabricated; perfect fitting; save labor in assembly. For nearly a half century, they have been building permanent business and good will for the sheet metal worker.

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- Globe Gutters and Downspouts
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- Globe Weather Stripping

There is a Globe product for every building need. Adequate stocks always ready for immediate shipment.

# SHEET METAL Building Products

**The Globe Iron Roofing & Corrugating Company  
Cincinnati, Ohio**

Published Every Other Week by Porter-Spofford-Langtry Corp., 139 North Clark Street, Chicago, Illinois. Entered as second-class matter, January 29, 1930, at the Post Office at Chicago, Illinois, under the act of March 3, 1879. Formerly entered on June 25, 1887, as American Artisan and Hardware Record. Yearly subscription, \$2.00

# NOW Translated

... ROMAN  
CONGRESSIONAL  
RECORD OF  
312 B. C.



Sen. Hipponeus (Dem). "I believe that one sheet metal is just as good as another. What my fat friend says is pure hooley."

Sen. Appius Claudius Caesus (Rep). "The gentleman from Etruria is so crooked that they built a special telephone booth for him. I specify GOHI (pronounced go-high) for all public buildings because I know my down-spouts. They've got to last until 1931."

**T**HE reason for the high resistance to corrosion of GOHI lies in the fact that this favorite, time-tested sheet metal is an alloy of pure iron with the correct amount of copper.

This alloying of pure iron with copper also explains the easy working qualities, the softness and ductility of GOHI.

Wherever sheet metal may be used, especially under conditions of corrosion of soil, water, or weather, GOHI has definite superiorities that make it preferred by those who build to last and who realize that the best work is always done with the most adaptable materials.

IT'S THE PURE IRON, ALLOYED WITH  
THE RIGHT AMOUNT OF COPPER, THAT  
GIVES GOHI ITS LASTING QUALITIES.

THE NEWPORT ROLLING MILL CO.  
NEWPORT, KY.



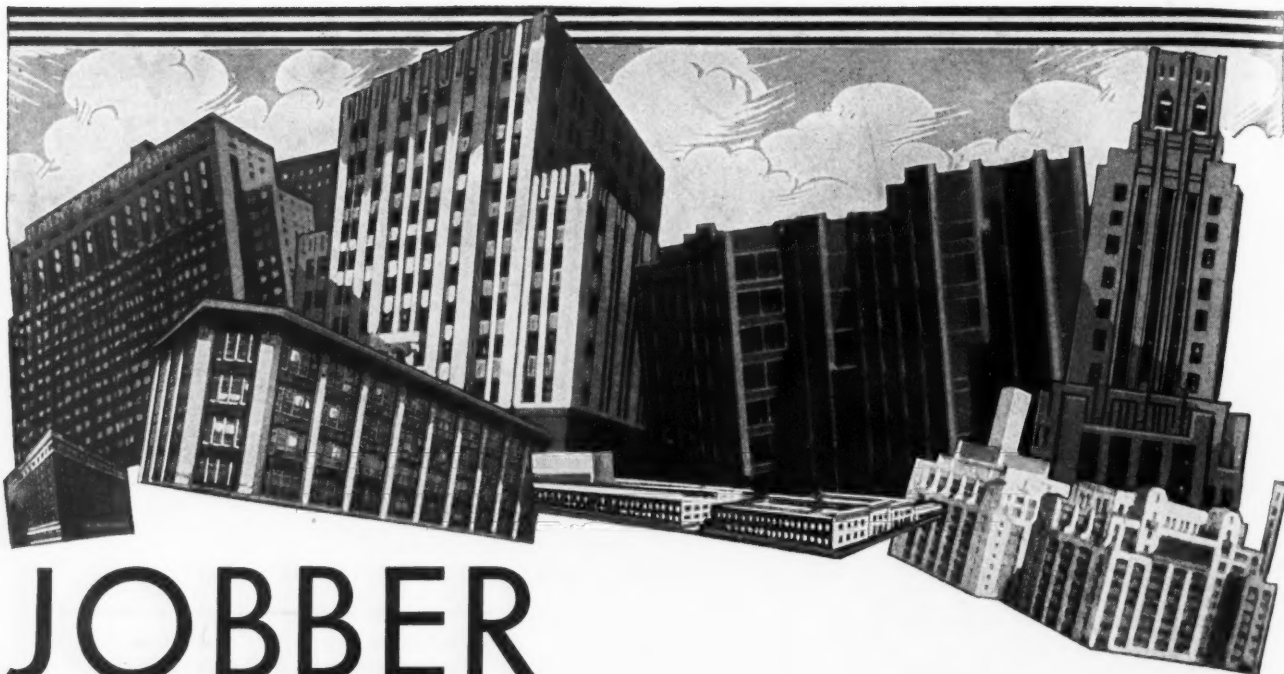
# GOHI

PRONOUNCED "GO-HIGH"

# SHEET METAL

Mention AMERICAN ARTISAN in your reply—Thank you!



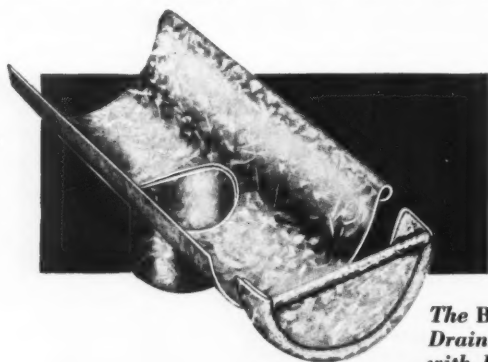


# JOBBER WAREHOUSING EVERYWHERE . . .

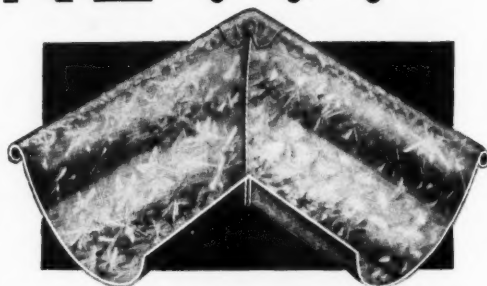
To insure Barnes Quality with Sudden Service, ample stocks are Warehoused Everywhere.

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**THE ARISTOCRAT**

**SERIES "S" STEEL**

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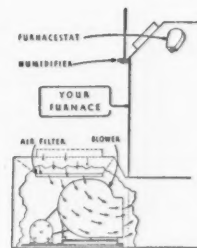
give the owner the utmost satisfaction and save a lot of time installing because they fit accurately and work properly.

### **NEW—**

### **The MONCRIEF Auxiliary Air Conditioner**

Attaches to any furnace already installed.

*Send for special circular*



**We supply everything used in  
a warm air heating job**

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Cleveland, Ohio

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*Mention AMERICAN ARTISAN in your reply—Thank you!*

Founded 1880

# American Artisan

THE WARM AIR HEATING  
AND SHEET METAL JOURNALCovering All Activities  
INGravity Warm Air Heating  
Forced Warm Air Heating  
Sheet Metal Contracting  
Air Conditioning  
Industrial Roofing  
Merchandising  
Ventilating

Did you ever wish you could reverse conditions and make the steam and hot water man subcontract to you? No doubt. There's a most unusual article on how to do this on page 24. It's by a man who knows his B.t.u.'s, too. Will be glad to hear what you think of this.

\* \* \*

We admit there isn't much work these days from speculative builders, but in Detroit a few heating contractors have solved the problem by getting builders to install automatic heating plants. The beauty is—it works. All the details begin on page 12.

\* \* \*

If we had a nickel for every sour "booster" fan job, we'd be rich. Maybe you would be, too. But boosters can be used if you know their limitations. There's good information on this on page 29.

Member of the Audit Bureau of Circulations

VOL. 100, NO. 20

SEPTEMBER 28, 1931

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JOSEPH D. WILDER  
Editor

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Dependable, yes, in more ways than one.

Dependable in service, *always*.

Dependable in sales appeal, *more so now than ever before*.

Premier Dealers say that Premiers sell themselves. We *do* know that Premiers are being featured more and more these days when money is scarce and buyers are more critical than they have ever been.

Now then, let's see how Premiers fit into **YOUR** business.

Let's start with the fact—and your books will prove it—that 15% of the jobs you sell return 75% of your profits. These jobs are the jobs you sell to the people who (1) want nothing but the best; (2) who are willing to pay for it, and (3) who make darned sure that they get it.

Naturally you want more of these jobs. Who wouldn't when the profit from one of these jobs is greater than the

combined profits from five of the other sort.

You can get more of these jobs (1) by taking off your overalls and putting on your Sunday suit; (2) by doing a thorough job of selling, and (3) featuring a furnace that your prospect *knows* is a darned good furnace without you saying a word.

That's how Premiers fit into your business!

Perhaps you've often wondered: "How about this Premier Furnace? What is so different about it?" If you *have* been wondering, why not know definitely?

A card will bring complete details, from radiator to ashpit and back again. If you've always thought that you'd like to know about Premiers, take time right now to look up a 1c stamp and a post card. It will be the best way you've ever spent a penny.

**NOTE:** You are probably busy, and so are we, thus a Premier Man will not call unless you ask for him.



Mr. Charles Goldstone, Premier Dealer in Menominee, Michigan, listed 50 individual and outstanding selling points of Premiers in the recent Premier Famous Features Contest, thereby winning first prize. How many selling points can you point out on the furnace you feature as your best?

**PREMIER**

Warm Air Heater Company

Dowagiac, Michigan

Cast and Steel Furnaces  
Guaranteed 10 Years.

Say you saw it in *AMERICAN ARTISAN*—Thank you!



# "The Quality of ANACONDA SHEET COPPER is beyond question"



Anaconda Copper was used by A. C. Hathorne Co. on these Dartmouth College dormitories. Copper supplied by Whitehead Metal Products Co., of New York, Inc.

The veteran contractor Morris Wool (left) and Frank Wool, proprietors of A. C. Hathorne Co., Burlington, Vt.

Anaconda Copper for the Pittsfield, Mass., high school, as on all Hathorne jobs, was furnished by Whitehead Metal Products Co., of New York, Inc.



*says*

THIS EXPERIENCED  
CONTRACTOR . . .

THE A. C. Hathorne Company, roofers and sheet metal contractors of Burlington, Vt., have an enviable reputation to uphold . . . a reputation of long standing that has helped win many important contracts throughout New England.

"We constantly use Anaconda Sheet Copper" FRANK W. WOOL of the company writes us, "because, like our workmanship, its quality is beyond question. Our craftsmen like to work with it because it forms so easily."

All over the nation, contractors have learned by long experience to put that same faith in Anaconda Copper. Their confidence is protected by every resource at this company's command: Mine-to-consumer control of every operation, up-to-date engineering and research facilities . . . manufacturing experience of more than a century. The American Brass Company, General Offices: Waterbury, Connecticut.



# ANACONDA COPPER

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## Fallacy of Mass Figure Psychology

It seems, sometimes, as we read and hear and discuss business, that the American public has been mass figured to death. It might almost be said that we have become a nation of mass figure calculators.

During boom times every whisper that gold shipments were up, that such and such a corporation increased its sales, that conditions in Argentina were so favorable that so and so anticipated a substantial increase in dividend rate were adjudged a sure-fire indication that everything was rosy and that another time payment contract could be safely entered into.

And now during slack times we are besieged from all sides with statements that car loadings are off one-tenth of one per cent for New England; that so and so's business barometer shows a drop of one per cent in indices relating to farm products; that automobile manufacturers made 21,000 fewer units this month than last; that the government is faced with an increased deficit of two hundred million dollars. The list might be continued indefinitely, but the result always comes out the same.

After all, what do these things mean to the warm air heating contractor?

Undoubtedly it will be far better for the heating industry if contractors will forget these only vaguely understood mouthings of men who make their living by making such predictions and keep their eyes and ears on things closer to home.

After all, what does the heating contractor in Red Cloud, Minnesota, or Peoria, Illinois, care if car loadings in New England are off one-tenth of one per cent? He should be far more interested to know that in his town, at least, local industry is going along pretty evenly, with few more unemployed than last year or the year before; that wages generally are pretty well distributed and also substantially equal to past years; that local stores are doing a fair amount of business since they dropped prices; that while there may be fewer new automobiles seen on the streets, practically everyone who owned a car in 1929 still runs one.

And most important of all, the contractor should remember that after all is said and done, he operates in a necessity field—for people have to keep warm.

Which brings us down to the ultimatum that in spite of all predictions by authorities, whether a heating contractor enjoys good business or poor business is pretty much a matter of his own control. If he wants

business and is willing to work to get it, he will find it some place.

If he doesn't want business, all he has to do is sit in the front window and look disinterested and business will go around the block to the fool who is working himself to death to keep his volume up when everyone knows business is bad.

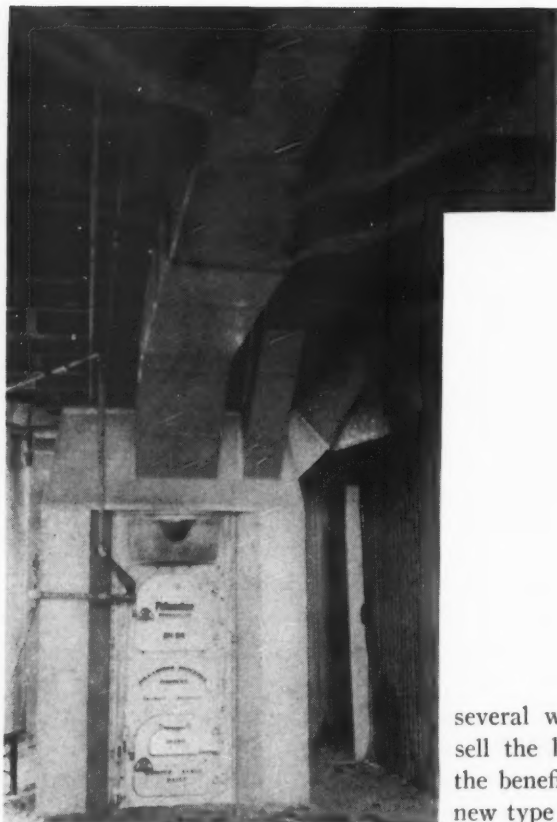
In spite of floods in China, world dumping of raw materials by the Soviet, lowered value of the pound sterling and so on and so on, old man winter is sure to sneak up on most folks and they are going to have to heat their houses. Though they may wish to save every penny, some good salesman will get an order if he can prove that a \$5.00 furnace cleaning job will mean a saving of \$10.00 or more in coal this winter. And if that cleaning job shows that there is a cracked section in the furnace or the old smoke pipe won't go through the winter without gassing the household to death, the owner probably will buy a new section or a new pipe.

And furthermore, let's not forget that there are millions of home owners still enjoying the same income they made last year and the year before, which income, coupled with decreased costs of living, mean really increased income. We willingly admit that a whole lot of these owners are afraid to obligate themselves for a new heating system, but someone who is a good salesman will sell them a new car or an electric refrigerator, or some other less essential contrivance than a heating system.

Which brings us to the conclusion that commodities will be sold in spite of world conditions. And if any commodity has any more interesting and appealing story to tell than new type heating we haven't yet heard about it.

What more could any group want than the very things we can now give the public? What other commodity can tell a story to compare with ours? What other commodity has so many vitally new and improved features to offer as ours? What other commodity is really as essential as ours? What other commodity can point to such a wealth of features contributing to health, convenience, comfort as heating?

So—let's forget for a couple of months all this mass figure prediction and remember that in our own little community there are people who will, or have to buy and we have something to sell. Let's sell them!



**I**N Detroit an unusual and highly interesting and important development has been going on during the past two years. This development is the adoption of automatic, forced air or air conditioning by speculative builders as a sales appeal in their houses.

In spite of hard times in Detroit, there has been an assuring volume of new house construction under way all during this year and all through last year. This construction has been confined largely to homes of the better class—that is houses built to sell from \$10,000 up. These new houses have been erected in real estate developments around the outskirts of the city, on land which only a few years ago was too far removed from fast transportation to be attractive to buyers.

The incorporation of some degree of air conditioning to houses of this type by builders anticipating a purchaser did not just happen. It grew first from a desire on the part of the builder for features which would sell houses in spite of curtailed buying and, second, from concentrated effort on the part of

## Detroit Builders Are Selling Homes By Talking Air Conditioning—

several warm air heating firms to sell the builder and the buyer on the benefits and advantages of this new type heat.

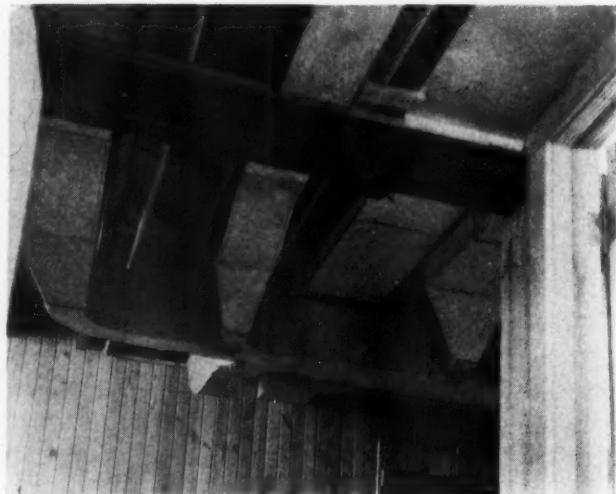
Of the firms which have been instrumental in educating the public and the builder in air conditioning, the Wentworth Engineering Company, headed by E. H. Wentworth, has played an important part. This progressive firm was one of the pioneers in forced air heating in the Detroit area. Since their first fan installations were made the company has given much study and devoted a large part of its selling effort to merchandising oil burners, oil burning furnaces, forced air replacements, automatic control and automatic humidification. That the

company has been highly successful in its efforts is attested by the large number of excellent systems now in operation.

In the systems which the Wentworth company has installed, both unit air conditioning furnaces and unaccessoried furnaces having blowers, washers, filters, controls sold extra have been used. But for both types of plant the company has made sure of successful operation by careful engineering of both equipment and system.

This attention to engineering detail is well illustrated by the photographs and drawings which are shown here. These pictures and plans were taken of a heating plant installed late last winter. How the

▼  
This picture and the one at the top of the page show details of the duct work and the square casing on the furnace. Each branch has a splitter type quadrant. Transitions and duct sections were made up complete in the shop  
▼



The house is typical of the class of home which has been erected all this year and last. Such homes sell for from \$10,000 up. Several Detroit speculative builders use these air conditioning systems as their strongest selling point



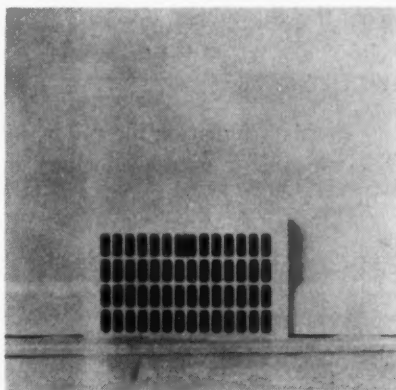
## As Engineered and Installed by Wentworth Furnace Engineering Co.

engineering detail is handled is shown by the data sheet in which every factor influencing the system is taken into account and by the duct system drawing which shows an unusual amount of attention to the details of getting smooth flowing warm and cold air lines.

These drawings for the plant were prepared by the Wentworth shop foreman, a man who has been identified with fan blast heating for many years. In designing the duct work for the company's installations, complete scale drawings such as shown are made on every job. From these drawings the complete duct system is made up in the shop, leaving only the fitting to be done on the job. This shop fabrication is of itself unusual, since many contractors in the Detroit area do most of the cutting and fitting on the job rather than in the shop.

This particular system is composed of several pieces of apparatus carefully selected for individual and overall efficiency and ability of the units to work together. The furnace is a Follansbee, coal-burning, steel furnace in a special square casing designed and baffled for forced air operation by the Went-

worth company. The blower used is a Silentaire controlled by a house thermostat. On this particular job, filters were omitted, since the house



Warm and cold registers are alike except the valves are taken out of the cold airs. All faces are painted to match woodwork

is located in a restricted residential neighborhood, removed from industrial or street dust and dirt. Humidity is taken care of by a Simplex air moistener placed above the drum in the hood.

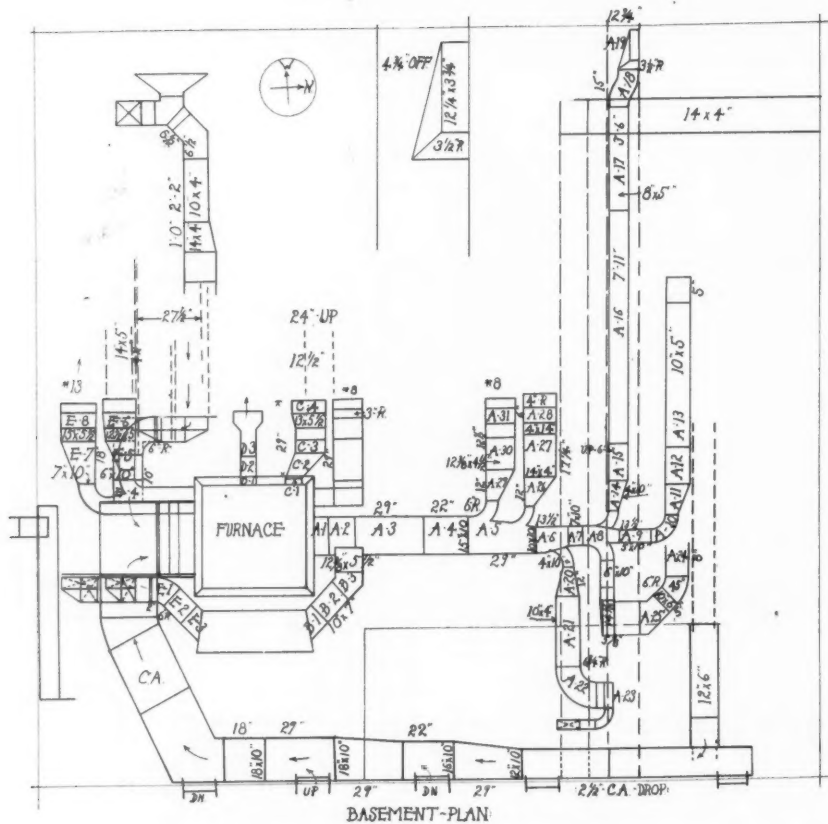
The duct system was carefully engineered for the house. Rectangular ducts are used with quadrant dampers used as splitters at all branch take-offs. The furnace with the fan behind is located against an

outside wall in a narrow space between the wall of the recreation room and the partition of the coal room. As shown on the basement plan, the duct system consists of one long warm air run with four short single branch runs feeding boots located near the furnace. The return air side consists of one very long run from the east and north sides and one shorter run from the south and west sides.

Just how detailed are the fittings made for this job are shown on the shop drawing on which every section of duct, all the transitions, elbows, fittings and turns are sized. The photographs show how these fittings look when assembled on the job. The section key numbers, such as A-3, B-2, C-4, etc., indicate further amplified detailed drawings on which the fittings are made up in scale for transfer to the metal.

The system for the house, as shown in the data sheet, was calculated by the B.t.u. heat loss method. At the top of the columns are indicated the coefficient of heat loss factors used for the particular materials and exposures of this house. These heat losses are translated in terms of total B.t.u. heat loss and





This shows the shop fabricating layout for the duct work. Note how every section, whether straight, elbow or transition, is detailed fully. The plan does now show the basement outside the area covered by the duct system

from these totals the C.f.m. for each room is entered on the sheet. This C.f.m. used is derived from the equation—

$$\text{C.f.m.} = \frac{\text{B.t.u.} \times 55}{\text{Temp. Rise} \times 60}$$

The pipe area used is calculated from the formula—

$$\text{Pipe Area} = \frac{\text{C.f.m.} \times 144}{\text{Velocity.}}$$

For this installation the following velocities were used—velocities in

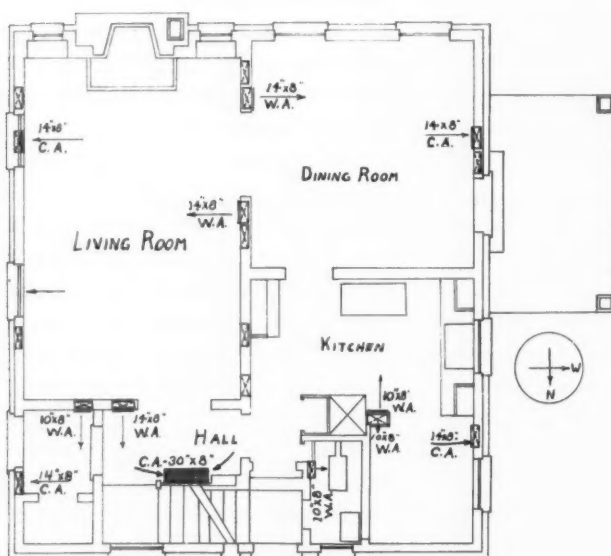
the main ducts 700 feet per minute. In risers 500 feet per minute. Velocities at registers 300 feet per minute. In selecting factors a register temperature of 145 degrees was used with a calculated return air temperature of 65 degrees.

The total heat loss for the house is shown as 106,492 B.t.u.'s and the furnace chosen has a capacity of 109,000 B.t.u.'s at a combustion rate of 5½ pounds of coal.

A feature of interest in this data sheet is the high room temperatures used. This temperature is set for 80 degrees for all rooms but the bath, where 90 degrees was desired. Note also that there is a calculated heat loss for the floor of the basement recreation room, the only heated room in the house with an exposed floor. This room is heated by an inlet in the wall next to the furnace and has a return air grille in the same wall.

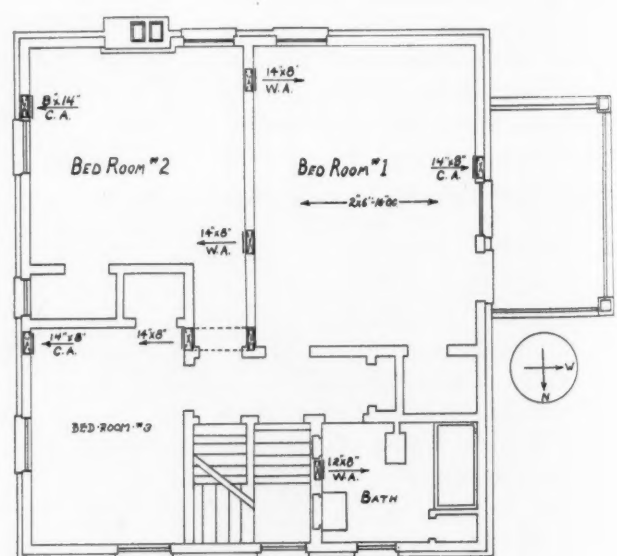
The heating layout for the first and second floor is worth attention because each major room on both floors has both inlet and outlet. On both floors these registers are located in baseboards with the valves removed from the outlet registers. All registers are painted to match the woodwork of the rooms.

A feature of interest is the use of warm registers of the same size



1ST FLOOR PLAN

Here is the first floor layout. Note the warm air registers on inside walls and cold airs on outside walls. Each room has a direct return to the fan



2ND FLOOR PLAN

The second floor shows the same characteristics as the first. Compactness is the key to the design



Coefficients of Heat Transmission—1.1 .21 .23 .06 .02											
ROOM	DIMENSION	CUB. CONT.	GLASS	WALL	CEIL.	FLOOR	INFIL.	TOTAL	TEMP. DIFF.	BTU. HEAT LOSS	C.F.M.
LIV.-R	21'0"x13'7"x8'-6"	2410	33	2.52			3615	162	80°	12,960	148
DIN.-R	13'11"x13'11"x8'-6"	1568	48	1.90			2352	154	80°	12,320	140
KITCHEN	13'11"x8'11"x8'-6"	832	9	6.0			832	44.57	80°	3,566	41
B.R.K.	7'6"x6'11"x8'-6"	336	13.5	1.70			504	10	80°	4,388	50
LAV.	5'6"x5'0"x8'-6"	140	6.6	2.2			140	2.8	80°	1,197	14
VEST.	8'0"x4'1"x8'-6"	272	21	81			816	16.32	80°	4,514	51
HALL	17'0"x5'5"x8'-0"	408	13	4.3	51		510	10.2	80°	3,980	45
HALL	8'0"x7'6"x8'-6"	510	13	5.5	11.75		510	10.2	80°	3,296	38
BED#1	18'6"x15'11"x8'-0"	2072	51.7	44.73	59.57		62.16	229	80°	18,320	209
BED#2	15'0"x13'6"x8'-0"	1620	42	21.3	202		24.30	195	80°	15,600	178
BED#3	14'9"x10'0"x8'-0"	1200	26	13.8	198		1800	36	80°	12,080	138
BATH	7'0"x9'0"x8'-0"	504	7	25.41	14.49		20.16	77.44	90°	6,970	80
REC.-R	15'0"x18'3"x7'-0"	1638	10	100		234	1638	14	80°	7,501	83
			11	21		14	3276	78.76			
										106,492	1215

The data sheet is completely filled out so that nothing is left to chance or guess. Such detail is necessary for present-day air conditioning systems. You can follow this sheet through and see how the system was designed

8 inches by 14 inches in practically every location.

The return air side of the system takes all the air from every major room in the house, both first and second floor. This use of positive circulation is an emphasized feature of Wentworth installations and is used as one of the talking points by the builders in selling houses to buyers. These returns are located in outside walls wherever possible.

The heating system installed in this house is typical of the kind of heating plants the Wentworth Company has been selling during the last two years. The system was developed to give the builder a feature which would make his houses more desirable than the run of houses offered for sale. In order to make the system saleable the features mentioned forced air, automatically controlled and humidified, positive circulation from all major rooms, metal work in keeping with present-day basement use, the most modern types of equipment, all engineered to fit each house, were worked out.

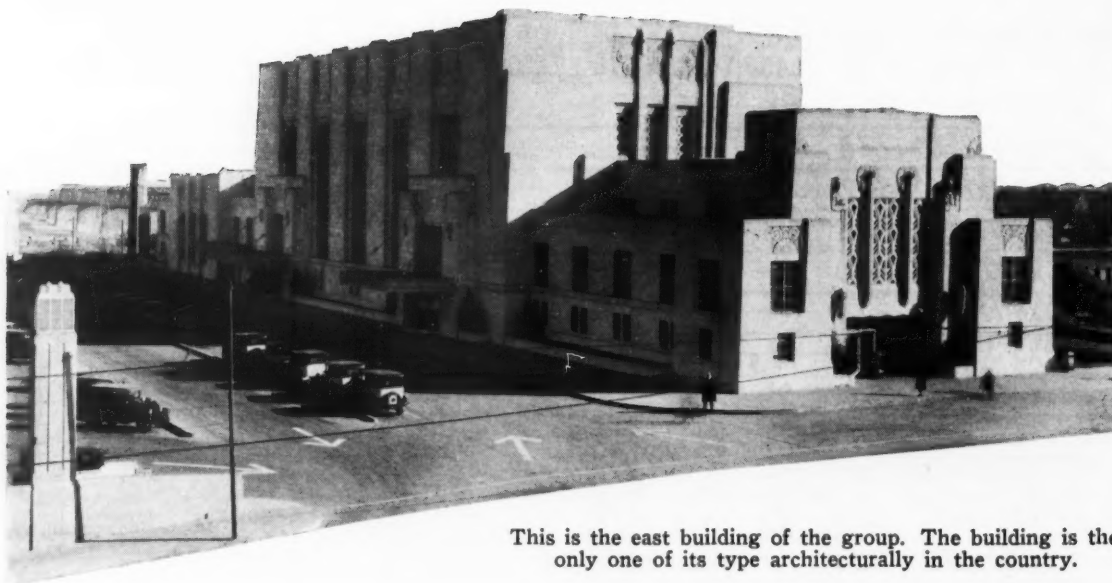
After the heating contractor had developed the system the idea was

sold to one contractor for trial. It proved so successful that other contractors have adopted it, resulting in the Wentworth company establishing a substantial volume of business. Air conditioning, to some de-

gree, has now become an established selling feature of Detroit home building during this period of slow sales. Sales of houses indicate that the public has taken a liking to this type of heat.

The blower, which is a Silentaire, is back of the furnace. Connection with the return duct system is through a straight drop box. The wide canvas collar is standard on Wentworth installations. The blower is grouted to the floor. The shoe to the casing is diverging nozzle





This is the east building of the group. The building is the only one of its type architecturally in the country.

# METAL—

## Of Many Kinds, in Many Forms Used in Omaha's Union Station

OMAHA, Nebraska's, new three and one-half million dollar Union Station, serving seven of the railroads which make the city the fourth greatest railroad center in the country, is one of the best 1931 examples of how metal in many forms and of many different materials is being used to ornament, protect and operate modern structures in which comfort, health and convenience are public requisites.

From a structural and architectural design, the new station group is the only one of its type in the world excepting the renowned station at Helsingfors, Finland. The architecture is ultra-modern and is the work of Gilbert Stanley Underwood, Los Angeles, California. Structurally, the station group is one of the largest in the country, which statement is attested to by the

quantities of materials used in the various buildings of the group.

In arrangement the group is a decided departure from current practice. There is one large station building to the east and across 18 tracks there is another station building of almost as large proportions, but not quite so distinctive architecturally. Once a passenger enters the station he is protected completely until he enters his train. The two buildings are connected by an elevated concourse which is in turn connected to the tracks by stair vestibules. These vestibules join long "umbrella" track sheds.

In this distinctive group of buildings, metal plays a highly important role. There is in both stations a complete ventilating system which is also a fan blast heating system during heating months. Throughout both buildings metals of several dif-

ferent kinds were used as ornamentation, and trim, in the waiting room, restaurants, rest rooms, and so forth. The train concourse is completely sheathed in metal. So also are the enclosed stairs and the sheds.

In the group, some 260,000 pounds of galvanized iron were used in the ventilation and heating system. More than 85,000 pounds of copper were used in the flashings, marquees, concourse, stairs and train sheds. There is also a wealth of bronze work in the heating grilles, marquee ornamentation, etc. There is also a large amount of bright metal used in the tables, counters, display cases and kitchens of the restaurants and rest rooms. And last there is much cast metal work of aluminum, bronze and iron in the ticket window grille work, the restaurant chairs, lighting fix-

tures and interior ornamentation.

Not all, but most of the metal work was fabricated and installed by Olson Brothers of Omaha. Many of our readers know A. E. Olson, one of the long established heating and sheet metal contractors of the middle west. Many readers know one or more of his four sons who are also in the business—Gilbert, Milton, Wallace and Myron. Gilbert it was who gave that excellent address at the last National Warm Air Heating Association Convention.

### The Ventilation System

Since the ventilation system consumed the largest poundage of metal and because the designers and owners of the station are depending so strongly on this heating and ventilating system to make their station comfortable regardless of weather, it may be well to set out some of the details of this system first.

Here is the concise description given by Martin T. Hooper, mechanical engineer of the architect's office:

### Ventilation

The design of the heating equipment for this structure is for a modified split system and does not include air conditioning apparatus.

As designed, it is intended to supply clean, tempered air of the

Use of metal is extensive and forms the basis for an elaborate operative and decorative plan. Metal marquees, such as this one, are the passenger's first contact with the plan which makes comfort and convenience key requisites. Sheet and cast metals were used in the fabrication of these marquees.



proper humidity and temperature to certain parts of the building, including the main waiting room and, with the exception of the dining room and kitchen, all space at the street or first floor level, establishing as nearly as possible with the apparatus as specified the following conditions:

	Outside dry bulb temp.	Inside dry bulb temp.	Inside wet bulb temp.	Relative humidity
Winter	10 deg.	70 deg.	57 deg.	45%
Summer	95 deg.	85 deg.	-----	-----

The main waiting room, containing approximately 1,000,000 cu. ft. with an estimated seating capacity of 250, is the largest single space or room to be ventilated.

Based on a 10 min. air change (for summer) there is an air supply of approximately 30 c.f.m. per person in the main waiting room. The air supply is introduced through ends of the seats and top of high backs of the seats with recirculating



The main waiting room is heated and ventilated by an extensive system of fan blast heating and mechanically circulated air. The inlets for the system are in the tops and ends of benches and along the ticket counter. Outlets are in outside walls near the floor. Seventy-five per cent of the air is recirculated.



or exhaust grilles in outside walls near floor line. In the interest of economy the layout as designed provides for at least 75 per cent of the air supplied (during heating months) to be recirculated. Vitiated air from the main waiting room is exhausted (during summer months) through grilles in ceiling.

The fan system which supplies fresh air to the waiting room is located in the fan and heater room below the first floor and is rated at 60,000 c.f.m. Exhaust fans and the duct system used in connection with this are located in the roof space and each have a capacity of 29,000 c.f.m.

The three street entrance vestibules and the three entrances from concourse are provided with unit heaters and are so located as to protect the waiting room against cold air entering from these openings.

The second largest room to be ventilated is the dining and lunch room containing 121,000 cu. ft. and

has an exhaust system giving an 8 min. air change. Fresh air is supplied through pivoted opening in windows. Exhaust is through grilles located in ceiling and connected through system of ducts to the two exhaust fans, each rated 7,500 c.f.m. The fan rooms are located in the space over the dining room. Due to the comparatively high ceilings of the dining and lunch room, the design included four unit heaters in addition to the direct steam radiation. The unit heaters are located in outside walls, each with rated capacity of 2,200 c.f.m.

The kitchen contains 50,000 cu. ft. and has a 3 min. air change. The air is introduced through pivoted openings in the windows. The exhaust grilles and duct system are located in the ceiling of the kitchen. The kitchen exhaust fan is in the fan room located in a fireproof space over the kitchen. Duct work at the point entering fan room is equipped with a fused-link fire

damper. The motor for the kitchen exhaust fan is provided with a heavy sheet metal enclosure with louvers venting to the outside.

A 6 min. air change for the toilet and wash room, smoking rooms and sink closets is provided by an exhaust fan and duct system, the fan being located on the third floor level and the ducts suspended below the first floor. Air is introduced through grille work in the door panels. Exhaust grilles are in the side walls.

Telephone booths are provided with 4 min. air change. Exhaust grilles are located in the ceilings of the booths. The fan and duct system is entirely an independent ventilating unit.

There are 11 supply fans handling 88,750 c.f.m. and 8 fans handling 84,000 c.f.m., making a grand total of 172,000 c.f.m. of air being moved when all of the fans are operating at rating. The motor installation for the fan drives totals 102 hp., one of the motors being variable speed and 18 being constant



Between the two main buildings there is an elevated concourse with enclosed stairways to the train sheds. All these structures are encased in copper, fabricated by the sheet metal contractor.





curred on the concourse, stairs and sheds.

The concourse which connects the two station buildings is lighted by windows along both sides. These windows are set above high sills and the panels thus formed are used to form the basis of the ornamental treatment. Briefly the concourse consists of a lower flat panel topped by a section of standing seam copper under the window sill, then the window which is single sash, then the lintel which projects slightly, then a standing seam panel and the flat stepped cornice which is carried back under the tile roof.

A cross section of a concourse side would show that these varying panels are used to make the sheet

speed. Remote controls for all fan motors except dining room and kitchen are located adjoining the station master's office. Remote controls for dining room and kitchen fan motors are located in the dining room manager's office.

Fans are all erected on anti-vibration platforms. This is essential for noiseless operation, especially for the fans located over the main waiting room and dining room.

Air filters and humidity regulation are installed in connection with the supply fan for the main waiting room, in order that during periods of recirculation the waiting room may be kept as free from dirt and dust as possible.

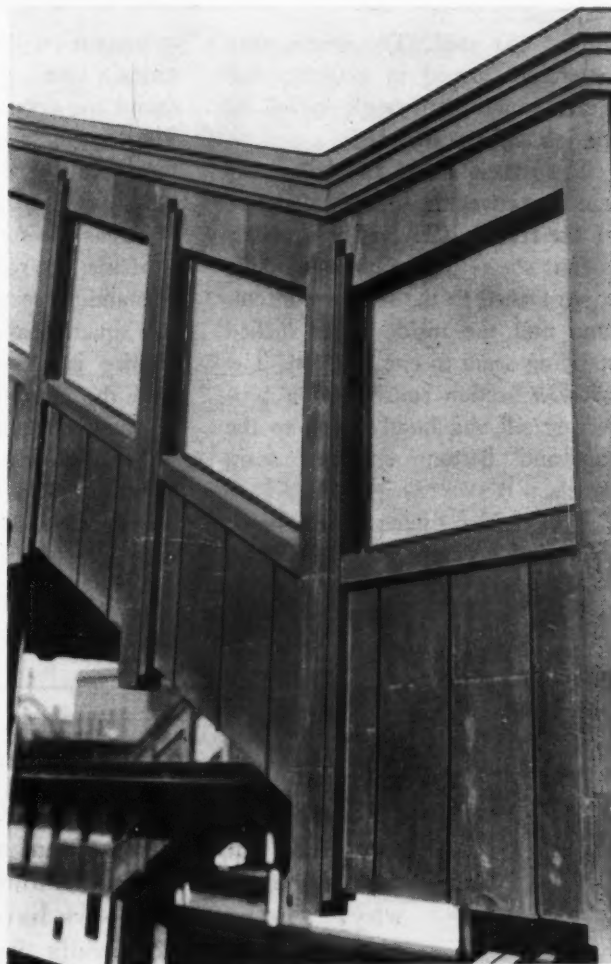
Galvanized steel duct work required in connection with the ventilation of the building amounts to approximately 130 tons.

Gravity ventilators venting the roof spaces and the fan discharges through the roof are of the rectangular low head type. Due to the objectionable visibility, the ordinary round type ventilators were not used. All ventilators were equipped with blade dampers.

Remote control for damper air motors is provided without exception throughout the system of ventilation. Dampers in each of gravity roof ventilators heads are included under this system of control. The valve panel board is in boiler room.

▲  
Above is a close-up of the sheet copper work on the concourse. Both plain and standing seam panels are used. The projecting pilasters form panel sections for the glass windows. Over tracks, the glass is replaced with copper sheeting.  
▼

▼  
The stairways to the train sheds are enclosed in copper formed to duplicate the design of the concourse. This picture shows how the copper was fabricated into simple, but attractive, decorative designs.  
▼



#### Architectural Sheet Metal

There are a number of interesting fabrication and erection details connected with the copper work done by Olson Brothers. The largest single use of copper oc-

metal conform closely with the structural framework of the bridge. The wide lower panel, for instance, covers the deep bottom chord of the flat truss which supports the bridge. On these panels 16-ounce crimped



The restaurants use metal of several types. The counters and display cases are sheet bright metal, the stools are cast metal. The grilles of the heating system are also cast metal.

copper was used. The sheets were generally formed in rather small pieces which were single locked on the job and not soldered.

The panels above and below the windows cover the bracing members of the truss. Each of these panels is four sheets wide with the outside edges locked to the ornamental column and the inside edges locked standing seam to one another. The window section consists of a projecting sill and lintel locked to the top and bottom standing seam panels.

The panel columns which divide the windows are the only orna-

mentation on the concourse or the stairs. One of the photographs shows the details of these columns. The sections were fabricated in the shop and delivered soldered to the job ready to be single locked. Whereas the roof of the concourse is of tile, the roofs of the stairs are of standing seam copper seamed to the square paneled cornice. This cornice is identical in outline on both the concourse and the stairs. All this copper is 16-ounce.

An interesting deviation in construction occurs where the concourse passes over a track. In these panels the lower side of the con-

course is covered with a heavy steel plate which is carried up the two lower sides for a few inches. In these panels the glass is omitted from the windows and a two-sheet section of copper is substituted. These precautions are taken to eliminate smoke and fume nuisance.

All of the copper work on the concourse and the stairs is over complete wood sheathing.

### Ornamental Metal

One of the photographs shows the interior of a restaurant. The tops of the counters are covered with Monel metal and the cases behind are also of this metal. The seats are stamped metal as are the bases. The lighting fixtures throughout emphasize this metal age as exemplified by the elaborate use of cast metal in the grilles of the ticket windows, the grilles of the heating and ventilating system and the large metal window frames and panels.

The marquees which protect the entrances are further indication of the adaptability of metal. The under side is of bright metal having lights thrown against the metal from troughs around the edges. The outside faces are cast metal designed to carry out the decorative scheme of the buildings. The fabrication of the sheet metal and the erection of the cast metal was all handled by Olson Brothers as a part of their contract.

**In most issues we give over a page to the activities of the various local, state and national associations. This page has been missing for several issues and some contractors have asked—why? The answer is—we haven't received any items from the associations. Undoubtedly many associations are inactive during the summer; nevertheless their work is highly important and we like to hear about their activities. This is an open invitation to associations to use this page**

# A Double Offset Elbow

For E. H. Robinson, Bridgton, N. J.

**I**N answer to Mr. Robinson's request I'm sorry to say that I know of no other way in which a fitting as per sketch submitted could be developed without the contractor losing some prestige, because the most important factor to be considered is to try to maintain as smooth a run as possible.

The accompanying drawing may seem a little hard, but once its principle is mastered it is surprisingly simpler than other methods where triangulation is involved.

It is true that where the fitting must meet conditions, where dimensions of opening, offset, and elevation are unequal, each side must be developed separate, but once the plan and elevation are drawn it

By **ANTHONY ZICKE**

takes little thought to develop the rest of the pattern.

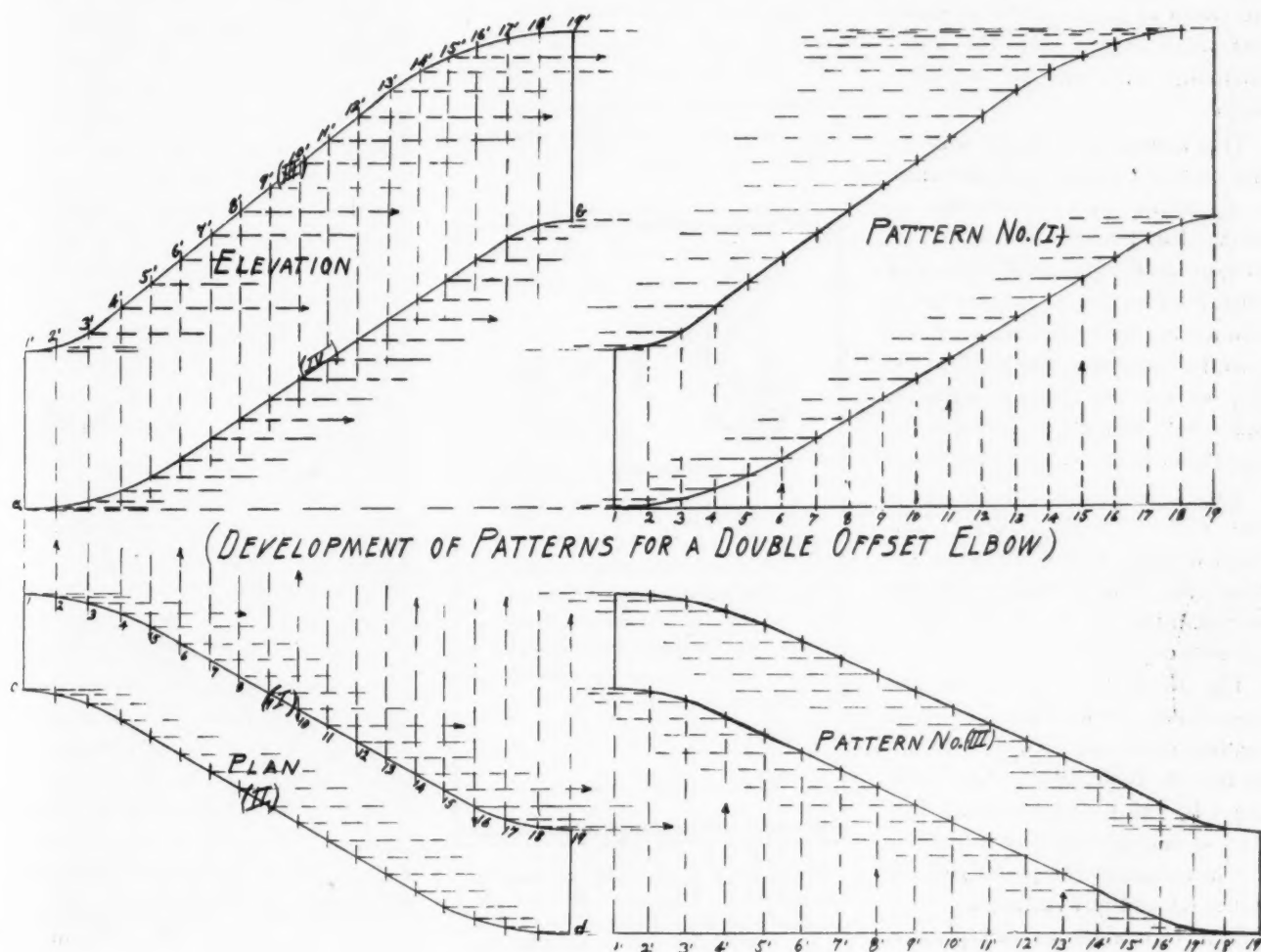
Take care to draw the curves of both plan and elevation as uniform as possible.

Divide side (I) of plan into a number of equal parts and carry vertical lines from these points upward to cut top and bottom of elevation as shown.

Right alongside of elevation set stretchout of side (I) of plan, as shown by small figures (I) to (19). Erect lines from these points to intersect lines drawn horizontally from elevation. Draw a line through these intersections and we

have pattern for left side. To develop top side (III) take stretchout (I') to (19') of elevation and set it alongside of plan. (Notice that spaces are not equal on sides (II), (III) and (IV) and each must be taken separate, as these were all projected from side (I) of plan to avoid confusion.) Carry lines from these points to cut lines drawn from plan as we did for pattern (I). A line through these points will give us pattern for top side (III).

Pattern for right side is layout the same way, taking stretchout (c), (d) of side (II) of plan, and stretchout (a), (b) of side (IV) of elevation to develop pattern for bottom side. Allow extra for seams, as these are not shown.







# In Direct Mail It's Not How Cheap— But HOW GOOD!

**E**VERYONE is interested these days in getting business.

And a great many furnace installers are today evincing an interest in getting business through direct mail solicitation. Which brings up some pertinent comments about direct mail literature every furnace man ought to know.

Most persons who have tried direct mail and kept a close check on the results obtained, know that there are, generally speaking, two kinds of direct mail—those which are cheap in price and those which cost more money than the buyer originally set aside for the campaign.

This matter of choosing between low cost and higher cost literature is a question every dealer has to decide for himself. In order to analyze his field he must know just what kind of home owners he is mailing to, what the price of the work he solicitates will stand in the way of cost of getting business, and what amount of business he expects to bring in from inquiries.

We discussed and showed just a few weeks ago the mailing campaign used by Homer Selch in Indianapolis. This mailing was low in cost and the literature mailed not very expensive.

The illustrations on these two pages show the backbone pieces of another direct mail campaign conducted in Indianapolis, this campaign by the Kruse Company furnace manufacturers and installers, and manufacturers especially of the Kruse oil and gas furnaces.

This campaign, as the illustra-

tions show, is not a low priced campaign. First of all the folder inside and with cover is two color—black and yellow—and there is quite a bit of art work used to illustrate the points stressed by the folder. The smaller mailing card is also two colors—black and red.

Here is what was done with the folder. The circular was mailed to a list of about 9,000 names late in August and early in September of 1930. The list was compiled from names of former customers of both cleaning and replacement and new furnace work. The list of customers was increased by selecting names of persons owning property taken from city records by districts.

With a mailing list of 9,000

names the cost of mailing would be one and one-half cents each including the return post card or a postage cost of \$135 for the 9,000 pieces.

Here is what was accomplished with the folder.

After the August and September mailings had been made and before the October mailing was made 78 orders directly traceable to the folders had been received.

Here is what Mr. Kruse says about this effort:

"When mailings are made every month, as ours are, it is pretty hard to tell just what month's folder brings in certain orders, but it is significant, I think, that our cleaning and repair business all through 1930 showed a substantial increase over 1929.

"While we are stressing a \$4.00 cleaning job with pretty expensive mailing pieces, our actual orders resulting from these mailings averaged \$16.27. We credit only repair business to this advertising, not complete furnaces.

"We have been carrying on this type of direct mail solicitation since December, 1929. We try to mail at least once a month and also to make every mailing just as effective as possible. A considerable part of our appropriation for local advertising is spent on just such effort and we have found that the expense more than pays for itself."

Just a word about the makeup of the folder. The cover, which is shown, folds back over the text, but does not, of course, cover it. The reason for this arrangement is

*This Man  
is on our payroll  
... Use No Stamp*

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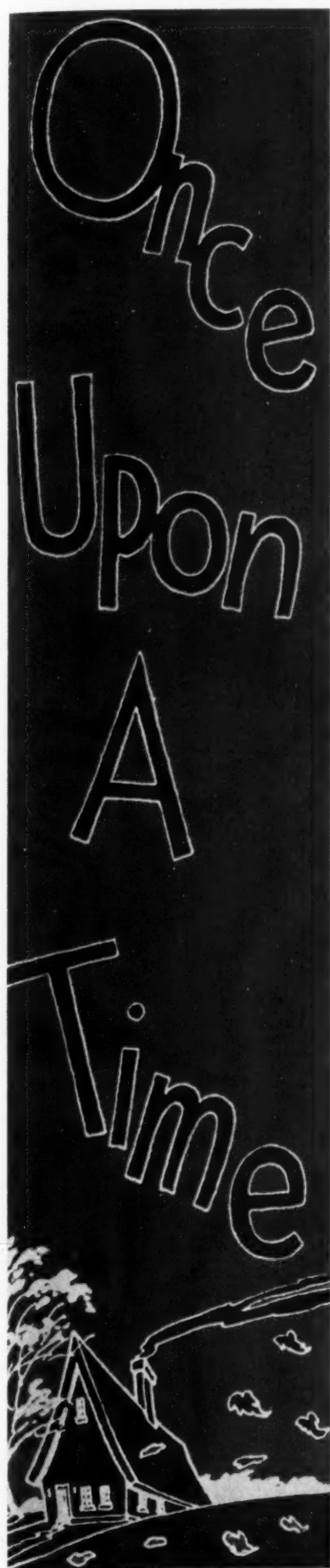
**Yes, MR. KRUSE...**

Please send your repair men promptly to clean my furnace, paint the front and the check draft (your regular \$4.00 job) and have them advise me if any repairs are necessary to insure its satisfactory operation through the winter.

Name.....

Address.....

This is the return card enclosed in the leaflet. The other side has the usual mailing address. The card is two colors—black and red



to intrigue the receiver into opening up the folder and reading the text. The illustrations are used for the same purpose—reader interest.

The small card which is shown is a business reply card with the usual post card address on the other side. This card is enclosed in the folder so that all the receiver has to do is write his name and address and drop the card in a mail box.

As we stated in the beginning, these leaflets are not cheap. No intention to get out a "cheap" job was considered as the primary purpose was to design a leaflet which

would make the receiver want to open it and then read the message through to the end.


The leaflets cost \$270.00 which would be a unit cost for the 9,000 mailing of 3 cents per leaflet. Another one and one-half cents was required for postage plus the time of the addressing and handling of inquiries.

From the results obtained it is evident that in this particular case, at least, a good looking leaflet, intelligently designed to get results paid excellent profits for the contractor's time and efforts.



Once there was a Furnace Man who did not remind his customers and hope-to-be customers that winter follows summer... sometimes suddenly.

\* \* \*



And when Jack Frost caught them unawares...

\* \* \*


They reminded him most unpleasantly of his failure to remind them—and demanded service immediately, if not sooner, because


\* \* \*



Their house was cold... Elmer had the earache; Baby Sister was sniffing; Grandmother had ague, etc., etc., etc.,


\* \* \*





But that Furnace Man was not Mr. Kruse who mailed his reminders regularly month by month and ASKED, PLEASE, EVERY TIME, to be allowed to do that work while he could

\* \* \*



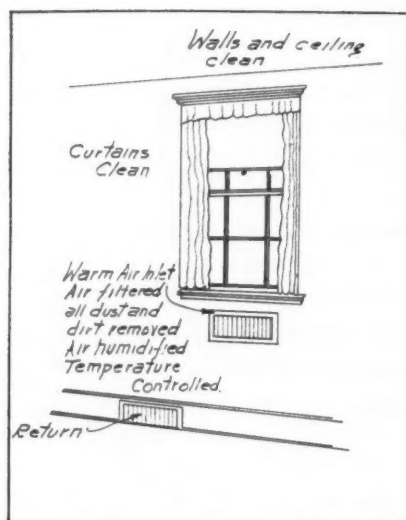
And he is still asking, PLEASE, won't you let him do it NOW?

**TALBOT 0218**  
 KRUSE COMPANY, Inc.  
 353 WEST 16TH PLACE, INDIANAPOLIS

The long strip at the left shows the cover. This is really a tab, designed to catch the receiver's eye by color and drawing. The inside carries the above message printed and illustrated as shown. Note the catchiness of the wording and the general feeling of good will which the leaflet leaves

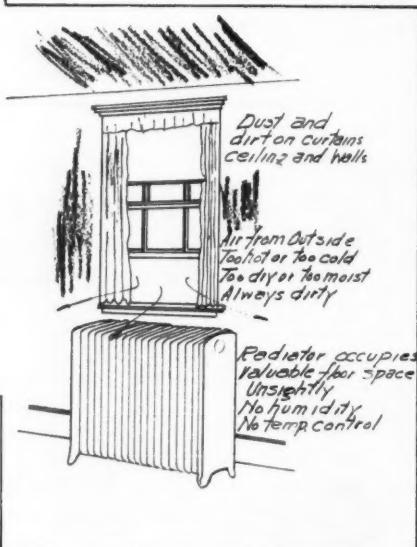
# FAN BLAST ENGINEERING

By PLATTE OVERTON  
Heating Engineer



## THIS Or

## THIS



**T**HE general impression regarding "air conditioning" seems to have this system confined to new buildings, furnace heating and the entire building or none.

As a matter of fact it may be adapted to one room or hundreds. Buildings new or old. Any type of heating system, warm air, steam, vapor, or hot water. That there is a vast market here will be obvious to the investigator.

The owner with a \$20,000 home built some ten years ago is hearing about air conditioning. Every home owner is a prospect. It follows of course that he would hesitate to wreck his house to install a \$4,000 air conditioning system. However, he will listen to a proposal to remove the radiators from his living room, dining room and library and air condition these rooms with a system that may cost him as low as \$700 or less. One will be requested to return and install such apparatus in the balance of the house.

The public has heard about air

conditioning. They are talking about it, but what is it? This is the contractors "in." When he has explained the system he should leave with the order for at least the first application for the living quarters of the house.

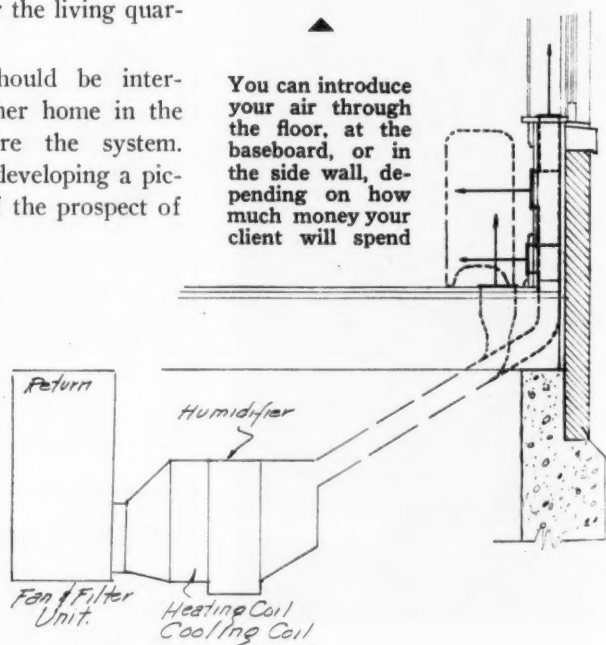
The prospect should be interviewed in his or her home in the rooms that require the system. Start the story by developing a picture in the mind of the prospect of

the room without radiators. A picture of clear, clean, floors. Unobstructed window space. Elimination of dust. Circulation of air. Provision of humidity and temperature control. What a story to tell. Cooling and dehumidifying in summer by passing cold water through the heating coil, by a system of by-passes installed with the system.

People will not eat in the street, but they will raise their dining room or kitchen windows and expose their food to a steady flow of dust from the curb. We open our win-

You can introduce your air through the floor, at the baseboard, or in the side wall, depending on how much money your client will spend

Ask your customer, "Which would you rather have, this or this?" and show an illustration, the one at the top of the page. Who would not take free floor areas, clean walls?



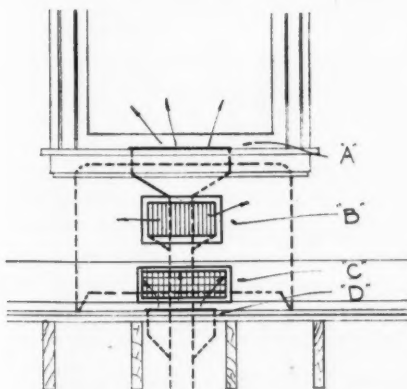


dows in the summer to get the "breeze" (if any), and endure air that is too hot, too damp and always dirty. With the proper air conditioning system we may manufacture the proper conditions in the basement and pass them into the room through small inconspicuous openings in the baseboard or side wall, or window sill.

Some idea of the application of such a system may be gleaned from the accompanying sketches. We have first the fan and unit. This unit may be adapted to hot water, steam or vapor. The unit as a whole will contain the fan, humidifier, and filter and heating unit. A bypass with gate valves provides for the passing of cold water through the unit for cooling and dehumidifying in summer. Here it is possible to establish a "loop" and a circulation through the unit of all the water used in the house, or if water is cheap it may be passed to the drain.

Any number of inlets may be provided for a room. If there are several and they carry not to exceed 75-100 c.f.m. each, 4-inch 28-gauge galvanized conductor pipe and elbows may be used from the main or plenum chamber.

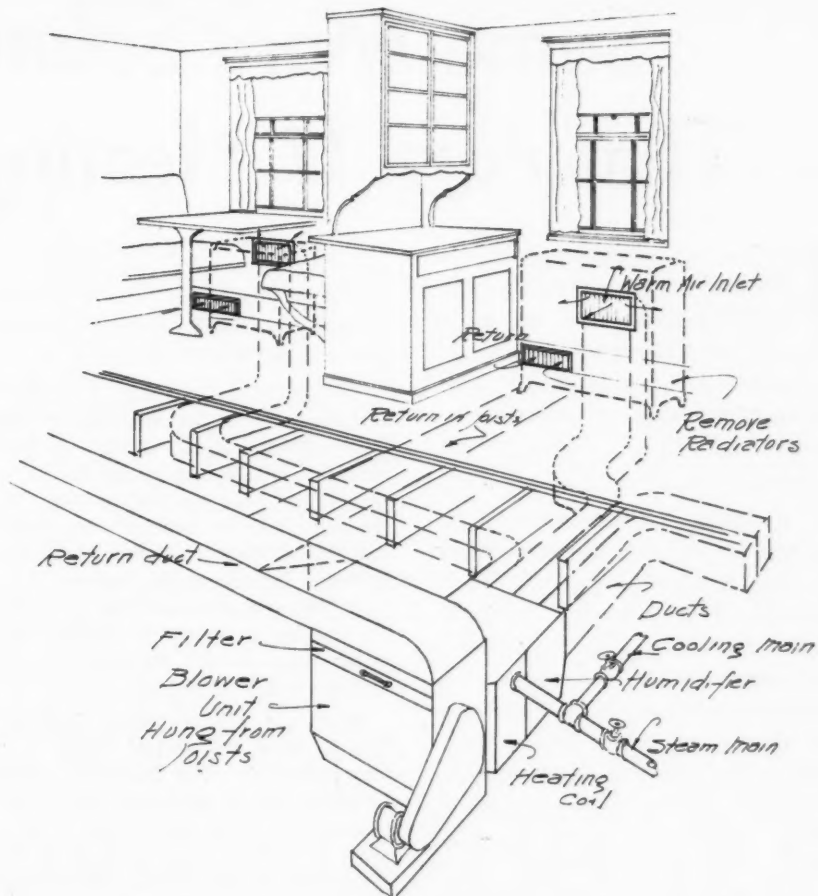
In the application "A," "B," "C," "D," "A" should be used if there



The text explains how to choose the type of inlet for your job. Here are the four types illustrated

is considerable glass surface in ratio to wall surface such as in bay windows.

"C" is possibly the cheapest to install in the side wall. Here the baseboards may be removed and the installation made simply and quickly without plaster being broken or



Here is an isometric illustration of a typical system. Heat may be from either a hot water or a steam coil equal to the radiation removed from the rooms to be air conditioned. The heater and fan can be suspended from the basement ceiling. If necessary pipes as small as 4-inch can be used for supply

removed. Of course "D" will cost the least and in some cases where no space in the walls is provided it is the only solution.

The size of the unit, fan and ducts depend on the requirements, and are calculated in the same manner as in new work. A complete survey should be made and a comprehensive plan made. The hooking up of the unit may be subcontracted to the steam fitter. Here at last is a chance to reverse the old order of affairs where the ventilation contractors is always the subcontractor.

Here is also a splendid opportunity for window display, and newspaper advertising carry the story to them directly with cuts and diagrams something in the manner shown in the sketches.

I believe it was Mark Twain who declared that while much had been said about the weather, nothing had ever been done about it.

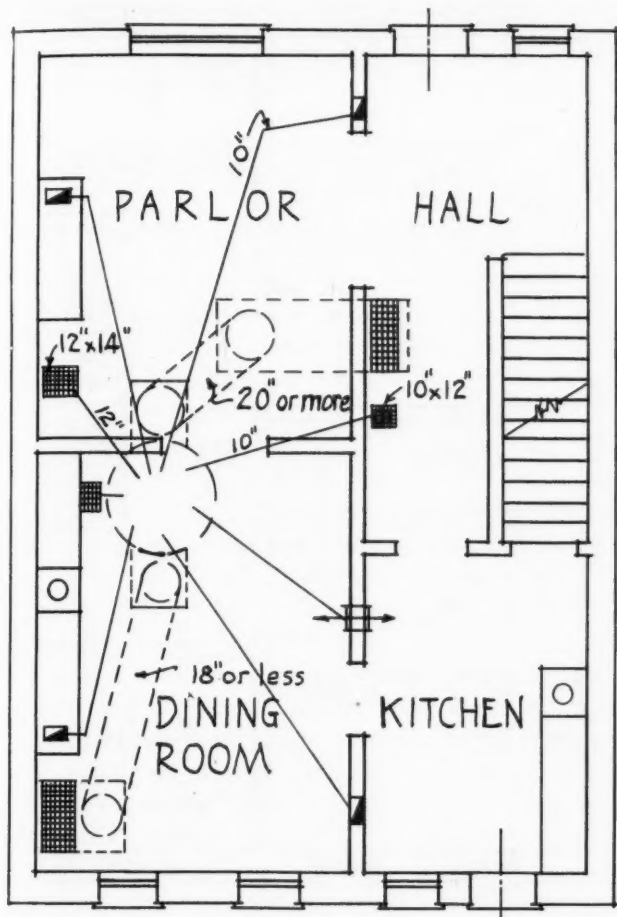
Heating and ventilating con-

tractors can do something about it, at least in the confines of the average home, and get paid for doing it.

A unit of 600-700 c.f.m. that will heat three fair sized rooms will not cost to exceed \$250 with controls; \$50 to \$75 should cover the installation and the steam fitting should not cost over \$25. Here we have an item of \$350 that should sell for \$500 to \$600 or less. If space is available for risers a 12-room house may be remodeled for air conditioning at a cost not to exceed \$1,200 to \$1,700 selling price.

Babson tells us to fight the depression with new schemes. Here is one with the better type of residence and the man with money as the prospect. There are hundreds of homes heated by water and steam, many owned by persons of wealth able and willing to buy convenience, comfort and cleanliness, who hesitate to tear up present systems unless something like this can be shown. We can show them.





is a cold draft across the parlor floor, and that the bedroom No. 1 is hard to heat, is due to the fact that the job is not balanced properly. The cold air return in the hall has to take care of the entire second floor and a portion of the first floor, which is reason enough to see why there is a draft over the parlor floor.

"The cold air face and return are not large enough to take care of the cold air. Naturally, the surplus of cold air goes through the parlor into the cold air return that is located in the dining room which is not overloaded.

"The bedroom is hard to heat due to the fact that it is the farthest from the head of the stairs. As the cold air coming from Room No. 2 checks it, with the help of the air from the other rooms.

"If the cold air return in the hall will be made larger, using a face not smaller than 18 in. by 30 in. and increase the duct to take care of the increase in the face, it will eliminate the excess air going across the parlor floor, also a greater amount of heat will be noticed in the bedroom.

"Leave the cold air as it is in the dining room, as the face will only admit air equal to an 18-in. pipe.

"If the face is left as it is it will act the same as an 18-in. return.

"But the return in the hall should

At the left are shown the suggested changes of C. N. Wade. Mr. Wade would reverse the cold air pipes and increase the size of the leader to bedroom No. 1. He also suggests cutting some wood off the bottom of the door in this room

have a face equal to 314 sq. in. An 18-in. by 30-in. face has a free opening of 360 sq. in. In other words, 18-in. by 30-in. equals 540 sq. in. minus one-third of this amount, or 180, gives the 360 sq. in., which is 50 sq. in. larger than the requirements of a 20-in. pipe."

#### P. H. COTTON

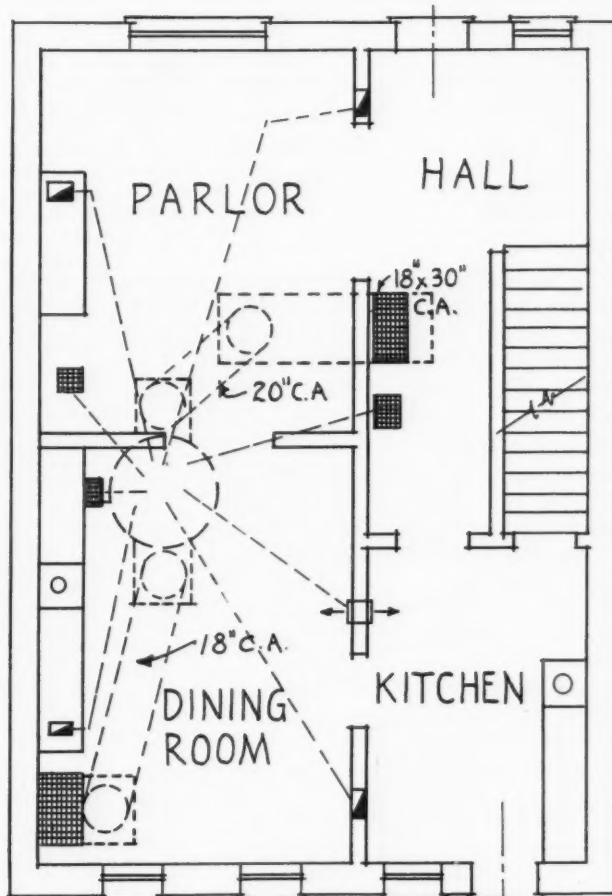
P. H. Cotton, who conducts a live business in New Orleans, takes time out from selling a long list of sheet metal specialties to give us his ideas on the problem. He says:

"This seems to be a poorly laid out system. What we need in this business is more practical men and fewer book and college educations.

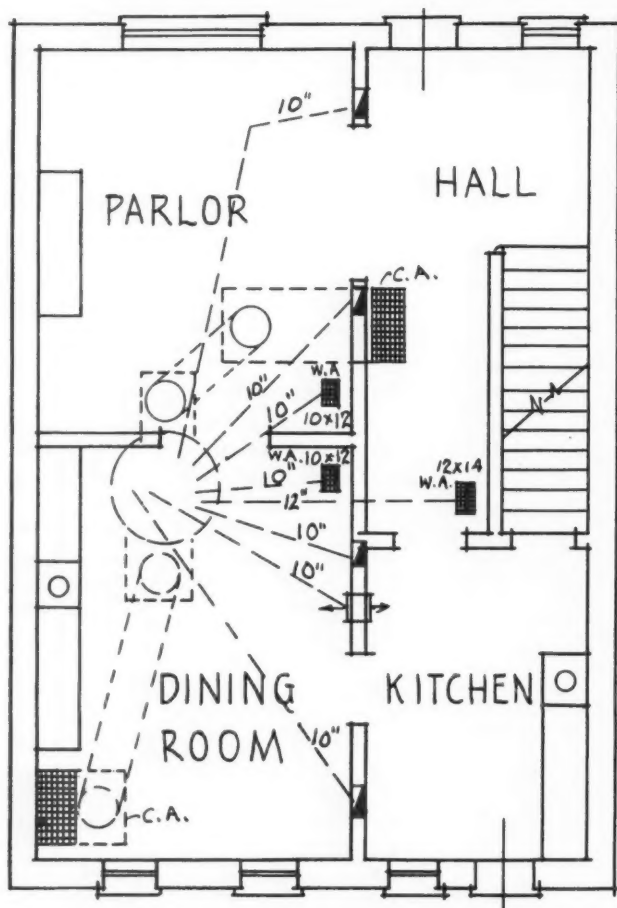
"I would make the changes shown on the alter layout as follows: All the 8-inch runs are too small and should be changed to 9-inch. The 9-inch runs should in turn be changed to 10-inch.

"I would also shift the 12-inch warm air register in the hall to a location more in the center of the floor and these inside wall openings. Do this to the warm air registers in the parlor and dining room so as to shorten all runs from the furnace. Also move the second floor bedroom registers to inside walls and make the leader to bedroom Number 1 a 10-inch pipe rather than the 8-inch pipe now in use."

At the right are the changes recommended by R. F. Clover. Mr. Clover would also reverse the cold air pipes or enlarge the one in the hall to eliminate the floor draft. He also gives some interesting figures on the register sizes







## O. J. FARUS

From Juda, Wisconsin, O. J. Farus writes that he is not a heating engineer, but merely a sheet metal contractor and furnace man, but he thinks a few simple changes will remedy the problem and eliminate the trouble. Here is what he suggests:

"In the hall you could either leave the present 12-in. by 30-in. register as is, and install an 8-in. by 24-in. register near the door in hall and also another register just opposite the one now installed.

"In other words, just inside the parlor, or you could put a larger register near the hall door and one in parlor and discontinue the one now in use.

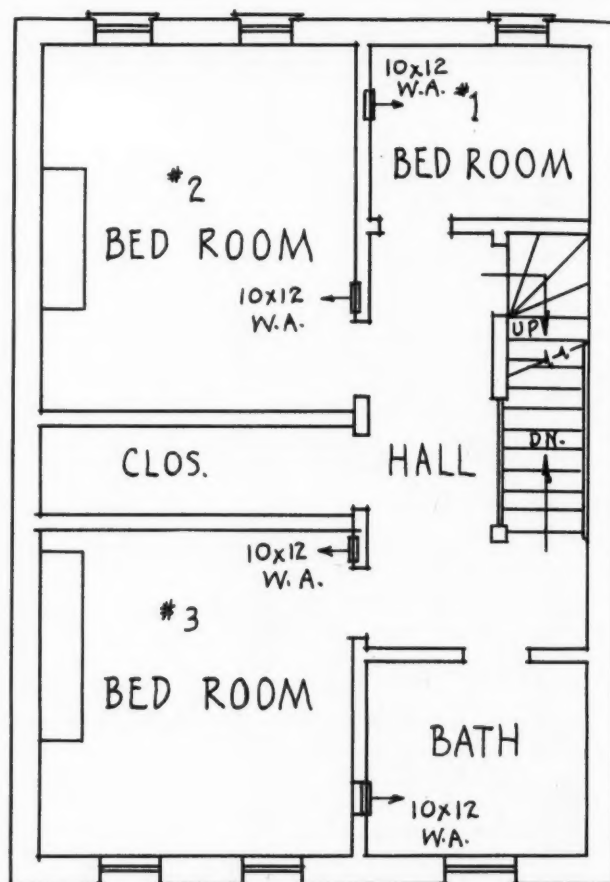
"I would drop them all into one box in the basement.

"Bedroom No. 1 has a very long run and is elbowed, therefore I would increase the basement pipe to 9-in.

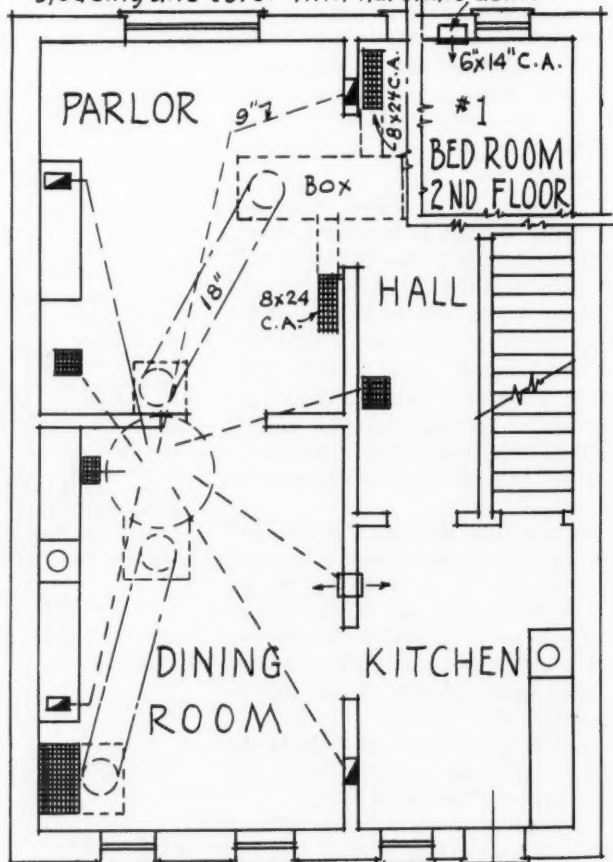
"I would then install a cold air grille in the baseboard near the window, possibly a 6-in. by 14-in., then cut out plate over studdings in attic and cover with hardware cloth so that mice cannot get in or out. This, if you have not tried it, may seem foolish, but it will cause a circulation and in every case I have applied it, it has cured the ill."

The two drawings above show the suggestions offered by P. H. Cotton. Mr. Cotton suggests a number of changes in both the warm and cold side of the system. One of the biggest changes is the shifting of warm air registers to inside walls

Right is the suggestion of O. J. Farus. This reader makes an interesting alteration by putting in an auxiliary cold air register just inside the hall-living room archway. He also increases the sizes of the basement leaders



Cold air stack from attic down to Bed Room #1. Cut hole in plate over studding and cover with hardware cloth.



# "Injector" Principle Provides Combination Gravity and Forced Air

THE plans and photographs which accompany this article show details of an interesting combination gravity and mechanical warm air heating installation recently sold and installed by the Hawkeye Tin Shop, Cedar Rapids, Iowa.

The house is a large frame structure which is considerably larger than it appears from the exterior photograph due to the fact that the long axis of the house is from front to back and not across the front. The equipment placed in the house is arranged to provide automatic heat. The furnace is a Weir 633 with a Century oil burner firing through the ash pit door. The system uses a Furblo blower which is arranged for gravity and mechanical flow. Both the oil burner and the blower are controlled by automatic devices so that furnace tending will consist of ordering oil brought to the supply tank.

Some of the design features of the system are of especial interest

since they show one approved method of handling a combination system in which air is introduced into the casing by what may be called the "injector" system.

On this particular installation the equipment serves both gravity and forced flow without the use of louvres. The method was developed by the Lakeside Company, manufacturer of the blower. The same method is applicable to one return systems, two return systems or more than two returns.

The principle problem to overcome on a design of this type is to keep the air from the blower from short circuiting back through the shoe, up the gravity pipes and down through the blower. Should such a short circuit be set up due to friction in the system, the forced effect of the blower is nullified.

The photograph of the heater and the plan of the trunk layout show how the blower was hooked into the system. The return air system consists of two long rectan-

gular ducts which are brought along the ceiling to a point almost above the casing. Transition fittings convert these rectangular ducts to round pipe which is sloped easily to the cold air shoes. These shoes were wide splayed so that at the rear of the casing they just missed coming together. The shoe was wide enough to come more than half way around the casing toward the door casting.

The blower is located on the floor between the shoes. As shown in the photograph, two 10-inch round pipes were tapped into the two round pipe return airs and connected into the intake boxes of the blower.

The next problem was to connect the blower into the casing so that short circuiting would be eliminated. The blower was set far enough back from the casing so that a spreader box might be cut into the two shoes. The discharge opening of this spreader box measures 11½ inches wide and 13 inches







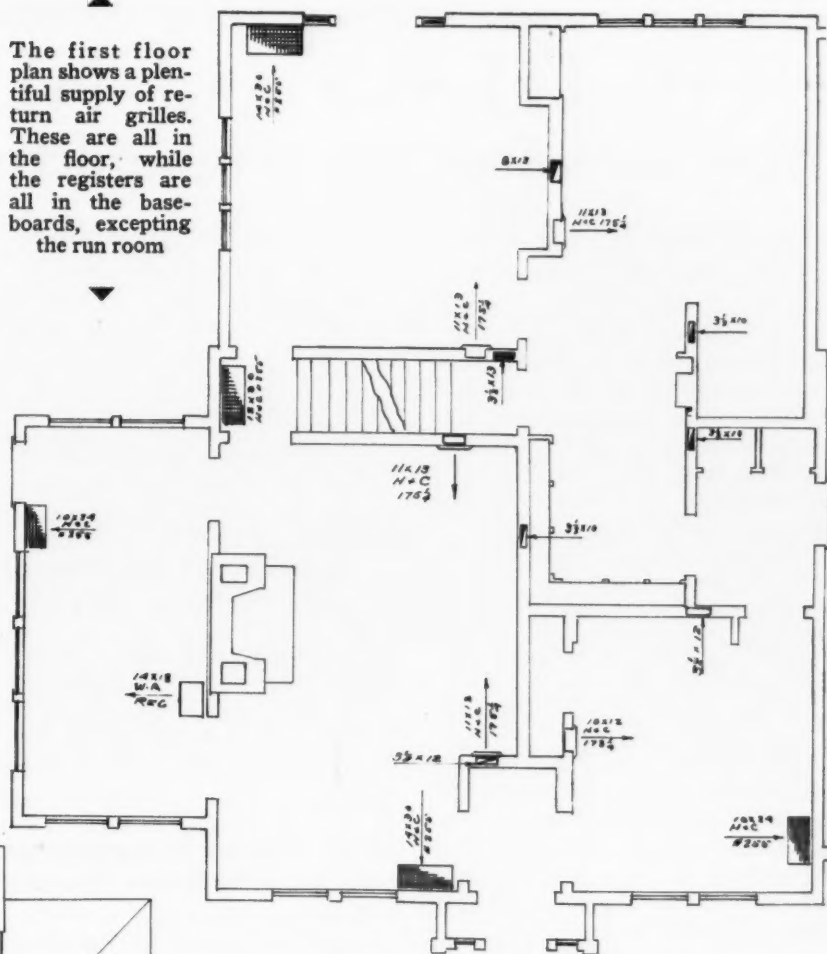
side walls and close to windows or doors.

The four bedrooms and bath on the second floor and the room and bath on the third floor do not have direct return air lines, but all these rooms open into one central hall which in turn opens into the closed in main stairway. Because this stairs is closed in, returning air is given a direct path to the grille at the foot of the stairs.

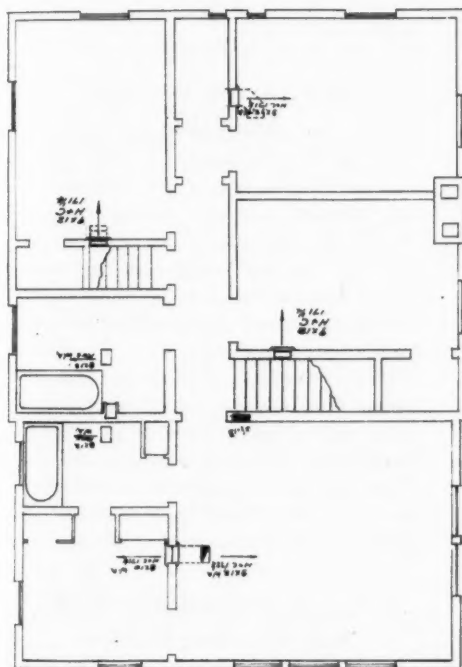
All of the registers in the house with the exception of the one in the sun room are of the baseboard type having detachable faces. The valves were left in the registers. The return air grilles are all stamped metal.

The plans show that in the master bedroom and connecting dressing room on the second floor and in the bedroom and bath on the third floor double headed stacks were used.

The first floor plan shows a plentiful supply of return air grilles. These are all in the floor, while the registers are all in the baseboards, excepting the sun room



To the left is the second floor plan. No direct return air is taken from the second floor, but the enclosed stairway acts as a semi-direct flue to the grille at the foot of the stairs



Below is the data sheet for the job. The customary Standard Code factors for heat loss were used. Losses are also given in B.t.u.'s. The areas of pipes used indicate sufficient excess for any exceptionally cold days

One of the illustrations shows the data sheet prepared for this installation. It is evident that the usual factors for determining pipe sizes according to Standard Code were used. This data sheet also shows the B.t.u. loss by room. It is evident from the data sheet that in most rooms more than the required amount of heat is being supplied.

CONTRACTOR: Hawkeye Tin Shop					OWNER: Cedar Rapids, Iowa					Page-1			
CEILING HEIGHTS					STANDARD CODE FORMULA					MULTIPLY TOTAL BY		Add For Unusual Expenses	
1st FLOOR 8'6"					DIVIDE GLASS SURFACE BY 12					9 For 1st Floor		1925 East	
2nd "					EXP. Wall "					6 " 2nd "		West	
3rd "					" CEILING "					5 " 3rd "		East	
First Floor					CU CONTENTS								
ROOMS	NUMBER	EXPOSURES			CUBICAL CONTENTS	Glass Div. by 12	Wall Div. by 60	Ceiling Div. by 80	Cu. Cont's Div. by 800	Totals B.t.u.	Basement Leader Area	Size Pipe Used	Pipe Area Used
		Glass	Wall	Ceiling									
Sun Room	108	172	136	1154	9	3	1 1/2	1 1/2	15000	135	14	154	
Living Room	30	123	---	1898	2 1/2	2	---	2 1/2	6750	60	12	113	
Bed Room	30	166	---	1122	2 1/2	2 1/2	---	1 1/2	6500	59	10	78	
Dining Room	60	162	---	1547	5	2 3/4	---	2	9750	87	12	113	
Kitchen	24	274	---	2346	2	4 1/2	---	3	9500	86	12	113	
SECOND FLOOR													
Bed Room	36	148	130	1040	3	2 1/2	1 1/2	1 1/2	8000	48	12	113	
" "	30	146	117	936	2 1/2	2 1/2	1 1/2	1 1/2	8250	50	12	113	
Bed Room	15	57	117	936	1 1/2	1	1 1/2	1 1/2	4750	28	8	50	
Bed Room	75	173	100	1904	6 1/2	3	1	2 1/2	12750	76	12	113	
Dressing Rm.	30	98	50	576	2 1/2	1 1/2	1	1	4750	28	12	113	
Bath Room	12	28	---	360	1	1	---	1	2000	12	8	50	
Bath "	12	44	63	504	1	2	2	2	3250	20	8	50	
THIRD FLOOR													
Bed Room	64	158	185	1393	5 1/2	2 1/2	2	1 1/2	11500	58	12	113	
Bath Room	16	12	50	375	1 1/2	1	1	1	3250	17	9	63	
Basement													
Room	84	180	260	1680	7	3	4 1/2	2	16250	146	14	154	
17761					TOTALS					121150	910	14	154

# NEW ITEMS and NEWS ITEMS

## From and about the Manufacturers and Jobbers

### Gilbert Olson Elected President Omaha Committee of Ten

An enthusiastic meeting of some eighty representatives of solid fuel and related equipment industries at the Hotel Fontenelle in Omaha, Thursday night, August 20, resulted in the organization of the Omaha Better Heating Association to Cooperate with the Committee of Ten.

Gilbert Olson, of Olson Brothers, representing the Warm Air Heating Industry, was unanimously chosen president.

Other men from our industries are: Sheet metal contractors—Julius Wessel of Bjornson & Wessel; boiler and radiator manufacturers—W. M. Ord, American Radiator Company; heating and piping contractors—Henry H. Kruger of Henry H. Kruger Co.; automatic heat controls—Hollis M. Johnson of American Appliance Company; railroads—W. D. Clifton of Union Pacific.

At the close of the meeting President Olson and Secretary Rushlau announced that plans had been completed for starting a school for all members of related industries beginning September 14. Combustion, coal and various types of heating, chimneys and other associated subjects will be taken up. The meetings will be held on each Monday night beginning with September 14, from 7:30 to 9:00 p. m., and the first term will conclude about the middle of December. \$5.00 will be charged for the fifteen-weeks course.

### Milcor Adds Metal Mail Box to Line

The Milcor Steel Company is now marketing a rural mail box, a new product that has been added to its large line of sheet metal products. It conforms in every respect to the specifications of the postmaster general.

The Milcor rural mail box is made of galvanized steel, coated with aluminum paint. The flag signal is finished on both sides with red enamel. The box is provided with a corrugated inner drain bottom; corners and edges are smooth and rounded. It has a neat, finished appearance, is well made and thoroughly weather-proof. This is the only type of mail box now available for patrons of rural and star route service. Literature will be sent upon request.

### Shop Card on Aluminum Welding Available

Aluminum Company of America now has ready for mailing a new shop card on the welding of aluminum. This card is to be hung in the shop at the welding machine. The card carries complete instructions on the approved methods and equipment and materials to use in welding. Oxy-hydrogen, metallic arc and carbon arc welding are discussed.

Copies of the card may be secured from the Aluminum Company, Pittsburgh, Pa.

The company also has available a more detailed instruction booklet entitled, "Welding of Aluminum." This booklet is one of a series giving technical data on the fabrication of aluminum.

### Silent Automatic Announces Oil Burning Water Heater

A new water heater designed by Silent Automatic Corporation has been added to this company's line of automatic oil burning equipment. The new unit, which has been in production for some time, is now on the market. The Silent Automatic water heater combines the economy of the storage type water heater with the quick action of the flash type.

It is available in two sizes, having storage capacities of 32 gallons and 53 gallons respectively, and heating capacities of 75 to 100 gallons at a 100 deg. F. temperature rise per hour. The tank itself is heavily insulated and enclosed in a steel jacket. Exhaustive laboratory and field tests show a practical operating efficiency of from 72 to 78 per cent for the new unit, according to Walter F. Tant, president of Silent Automatic Corporation.

The heater is durable, compact and entirely self-contained. The entire heater is assembled into one unit and shipped complete from the factory. Every part of the assembly, including the burner and controls, is accessible, and the burner and refractory hearth may be removed as one unit and replaced, if necessary.

The heater is equipped with the most approved type of automatic safety and operating controls, including a stabilizer, which automatically maintains a constant draft in the fire box under all operating conditions.

A descriptive booklet on their new Water Heater is available upon request.

### J. E. Merrick's Mother Dies After Short Illness

On September 9, 1931, Mrs. Mary C. Merrick passed to her reward after an illness of only a few weeks. On the 5th of last May she celebrated her 87th birthday. She is survived by one son, J. E. Merrick; two daughters, Mrs. S. N. Mohler and Mrs. Edwin C. Current; fifteen grandchildren and fifteen great-grandchildren.

The funeral was conducted from the Immanuel Baptist Church, of which she was a charter member, having transferred her membership to that church at its inception 41 years ago.

Six of her grand-sons served as pallbearers. They were: Earl R. Merrick, J. Wm. Merrick, Robert G. Merrick, Edward A. Merrick, Louis N. Merrick and J. Randolph Merrick.

J. E. Merrick was last year's president of the National Association of Sheet Metal Contractors.

### New Inland Booklet Available

Inland Steel Company, Chicago, now has for distribution a new edition of the booklet "Inland Open Hearth Sheet Steel Products." It contains all the information, brought up to date, ordinarily needed for ordering steel sheets. Standard Extra and Differentials, Sheet Weights, and Bundling Tables, Standard Commercial Tolerances, and Trade Customs and Practices are included as well as concise descriptions of all Inland Sheet Steel Products. The booklet is coat-pocket size for convenience and contains 56 pages of condensed, useful data.

### Follansbee Brothers Issue New Roofing Folder

Follansbee Brothers Company, Pittsburgh, have just had printed a new black and white folder describing by pictures the various stages of installation for a tin roofing job.

The folder contains pictures of several recently completed roofs and describes the construction both by text and by drawing.

The company prepared the folder to aid the contractor sell tin roofs to home owners. They suggest that the folder be carried in the sales kit and left with the prospect for study. Folders will be mailed to contractors wishing them.

### Complete Welding Rod and Equipment Data in New Ryerson Bulletin

To help the user keep up with new changes in the field of welding, Joseph T. Ryerson, Inc., have recently issued a bulletin in which the newer types of welding rod and equipment are illustrated and described. Extensive information on uses is also included.

The first pages contain valuable information on gas and electric welding rods. Under these two classifications, a variety of rods representing all types of welding are described. The structure, characteristics and purpose of each rod is explained.

The second section is devoted to the subject of acetylene and electric welding equipment. Included are the many improvements which have recently broadened the field of welding to make practical all types from portable welders to complete railroad track welding outfits.

This publication, "Bulletin W," is available on request.

### Cleveland Preparing for Heating and Ventilating Exposition

With over half of its exhibit space already sold, the Second International Heating and Ventilating Exposition, to be held in Cleveland, Ohio, January 25-29, 1932, in conjunction with the annual meetings of the American Society of Heating and Ventilating Engineers and the American Society of Refrigerating Engineers, is well on its way to duplicate and even surpass the success of the 1930 show in Philadelphia.

So many developments in heating, ventilating, and air conditioning practice and equipment have been reported since the previous exposition that the displays at the Cleveland show are being awaited with keen anticipation, since many of them undoubtedly will be in the nature of premier presentations of the latest apparatus and devices.

An idea of the comprehensiveness of the Second International Heating and Ventilating Exposition is to be seen in the fact that it will embrace separate sections, one for the heating and ventilating industry in general, an oil burner section, a gas section, and a warm air section. In addition to the endorsement of the American Society of Heating and Ventilating Engineers, the exposition will have the active support of the American Oil Burner Association and the American Society of Refrigerating Engineers. All three of these organizations will have booths

at the show, making the exposition in fact representative of every branch of heating and ventilation.

The fact that the American Society of Refrigerating Engineers will hold its annual meeting in Cleveland simultaneously with that of the American Society of Heating and Ventilating Engineers has made it possible to arrange for a joint session of both societies during the exposition. This meeting will be held in the Cleveland Auditorium.

Each society will hold its regular morning sessions at its own headquarters, leaving each afternoon free for attendance at the exposition.

### Carrick Engineering Co. Announces New Fittings

The Carrick Engineering Company, 431 South Dearborn Street, Chicago, Illinois, announces a new four-page bulletin, "Carrick Stiff-Arm Fittings." It will be sent on request. These fittings are of entirely new and improved design.

The installation of a system of automatic combustion control requires certain mechanical connections between the regulating units of the system and the devices which are to be controlled such as dampers, motor controllers, regulating valves, shafts, etc. The Stiff-Arm fittings have been designed and are manufactured by the Carrick Engineering Company especially for the purpose of providing means for rigidly connecting the controlled devices to the regulating units.

### Schwab Furnace and Supply Marketing New Incinerator

Schwab Furnace and Supply Company, Cleveland, Ohio, is now marketing a new incinerator known as "Disposal" number 3. The incinerator uses gas for fuel. It is portable and needs no permanent base or chimney.

The unit has only to be connected to a gas line and to any flue by a short length of pipe and it is ready for use. Both these connections can be taken down after firing.

The construction of the unit consists of a cast iron top, a steel shell, heavy asbestos lining, firebrick and an inside steel lining. The grates are iron.

A special feature is the patented odor consumer whereby odors are passed through a special space between the combustion and fire chambers to be brought into contact with direct flame and completely consumed.

The grates are especially designed to make easy removal of clinkers or large unburned objects.

### New Oil Burning Furnace to Be Marketed

A joint merchandising arrangement has been reached between Silent Automatic Corporation and the Detroit-Michigan Stove Company, it was announced today by Walter F. Tant, president of Silent Automatic, following a final conference with William T. Barbour, president, and John A. Fry, vice-president, of Detroit-Michigan Stove Company.

The arrangement calls for the merchandising by Detroit-Michigan Stove of a complete warm air heating unit consisting of a specially designed warm air furnace and a standard Silent Automatic Burner.

It is pointed out by officials of the two companies that this trade arrangement is of particular importance to the heating industry and to the consumer for the reason that the combined unit offers an efficiency which is difficult to attain when furnace and burner are separately installed.

An intensive sales program has been perfected by the Detroit-Michigan Stove Company and it is believed by officials that the moderate price of the new unit will result in a substantial volume of immediate sales with attendant increases in production at both plants.

### Larger Parcels Admitted to Mails

A decision of much interest to the mailing public was rendered recently by the Interstate Commerce Commission at the request of Postmaster General Walter F. Brown, who asked that the size limit of parcel post be increased to one hundred (100) inches, length and girth combined, and the weight limit be increased to seventy (70) pounds for all zones. The request was granted, to be effective August 1, 1931.

Director of Parcel Post J. C. Harra-man, in Chicago during the week, says that this decision will greatly expand the usefulness of parcel post for it will admit many additional articles to the mails which, heretofore, have been too large or too heavy to be carried by parcel post. He estimates that the increase in the weight limit will add one and one-half million dollars to the department's revenues a year, while the increase in the size limit of parcels which may be carried by parcel post will add three and one-half million dollars to the revenues, making a total increase in the receipts of parcel post to five million dollars.



## Announcing the New Improved



## PURE-AIR DOUBLE-WELDED-STEEL FURNACE

1. New Front. Adds beauty to basement.
2. New and advanced radiator construction.
3. Sealed tight front for pressure work.
4. Ball bearing duplex grates.
5. Oversize water pan.
6. Double welded, 100% efficient joints.
7. Quickest and easiest furnace to assemble.
8. A size for every purpose.
9. Special designs for burning oil and gas.

*Write for Information and Prices*

**Enterprise Boiler & Tank Works**  
1955-75 N. Long Ave. Chicago, Ill.

## NOW! You Can Sell The Heaviest Furnaces Made ---



## The U. S. FURNACES

*"furnaces that make selling easy"*

Our new policy "Exclusive Dealership" has won nation wide approval. Dealers everywhere acclaim the U. S. Franchise as most profitable. It will pay you well to investigate.

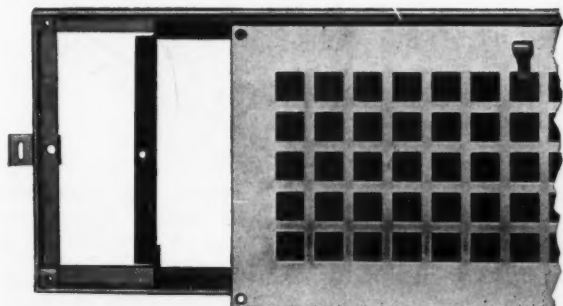
### == Many Unusual Features ==

DOUBLE JOINTS—NO BOLTS  
NO CEMENT  
ONE PIECE CONE SHAPED  
DEAD CENTER GRATE  
A TEN YEAR GUARANTEE  
ELIMINATION OF ALL DOOR JOINTS

WIRE  
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OR  
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IMMEDIATELY  
FOR  
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DEALER  
PROPOSITION

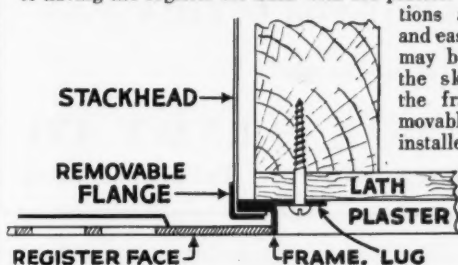
**The United States Furnace Company**  
724 Market Street Youngstown, Ohio

## H & C Forced-Air Registers With this New Construction are Installed Perfectly in Jig-Time!



Forced-Air Sidewall Register No. 3351  
Patent Pending

Every installation of the new 3-piece H & C forced-air sidewall registers is a perfect installation—secure, free from leaks and possible valve trouble, plus the decidedly attractive effect of having the register set flush with the plaster. And installations

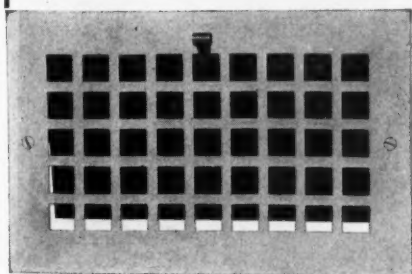


are quickly and easily made. As may be noted from the sketch below, the frame and removable flange are installed when the stackhead is placed—the plaster is brought flush with the frame, and any time after plastering the job may be completed in a jiffy by simply screwing the face in position. Regardless of how uneven the tin work of the stackhead may be, the removable flange automatically smooths it out and holds the stackhead in absolutely tight contact with the frame.

Our No. 3351 Sidewall registers, and No. 3151 Baseboard registers which incorporate the same construction, are indeed ideal for new house forced-air installations.

See them at your jobber or write us for further information.

### No. 3351 1-Piece Forced-Air Sidewall Register



Designed primarily for old house work. Overlaps the wall opening. Also perfectly adaptable to new work where removable face and flush installation are not essential. 1-piece Baseboards and Intakes to match.

## HART & COOLEY MFG. CO.

CHICAGO, 61 W. Kinzie St.  
NEW YORK, 101 Park Ave.  
PHILADELPHIA, 1600 Arch St.  
BOSTON, 75 Portland St.

NEW BRITAIN, CONN.—NASHUA, N. H.

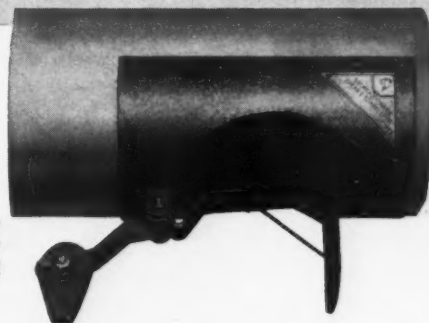
Factories at Holland, Mich., New Britain, Conn., Nashua, N. H.

Registers for all purposes. Also a complete line of Furnace Regulators, Dampers, Pulleys, Chain, and the H. & C. Automatic Heat Control.

# MAKE MONEY NOW

with  
the new

## Silent Automatic DRAFT STABILIZER

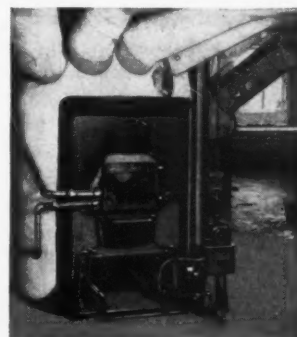


INSURES EVEN DRAFT  
SAVES FUEL COST  
CUTS FUEL WASTE

**N**OW—at the start of another heating season—is the time to install a Silent Automatic Draft Stabilizer in every heated home in your territory. Regardless of the type of heating plant or kind of fuel burned, a Draft Stabilizer will cut the user's heating cost and increase the efficiency of his plant. It's easy to sell and easy to install; it's a big profit item for any heating contractor, jobber or dealer. Mail the coupon today for complete information.

### SILENT AUTOMATIC CORPORATION

12001 East Jefferson Ave.  
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### RETAIL PRICES

\$10<sup>00</sup> and up

liberal profits for  
heating contractors,  
jobbers, dealers

### C O U P O N

Silent Automatic Corp., Detroit, Mich.  
Please send me, without obligation on my part, facts about the new Draft Stabilizer and how I can profitably sell it to my customers.

Name \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_

## SILENT AUTOMATIC



(438)

Built by the World's

Largest Manufacturers of Domestic Oil Burners

Mention AMERICAN ARTISAN in your reply—Thank you!

# NOT just another furnace

*... but Hess Air Conditioning for this home, where only the best was considered.*



This beautiful living room, with very high ceiling, is but one of 20 rooms having ideal atmospheric conditions the year 'round. A total of 60,000 cu. ft. of air is recirculated every few minutes, winter and summer, producing healthful, clean, humidified air.

Installations like this, ranging up to \$7,000, build prestige and profits for installers. Hess Systems are growing rapidly because they are modern, far ahead of

ordinary furnace or radiator heating systems.

You, too, can "outclass" competition with Hess Systems. They help you meet architects and owners on a different plane—you sell not on price but on performance—backed by a reputation of real success.

Sell "something different" in 1931—Hess Systems. Write us today for facts that will make more money for you and establish leadership in this work.

**Hess Warming & Ventilating Company**

1201-1211 S. Western Ave., Chicago, Ill.

Branches: DETROIT—MILWAUKEE

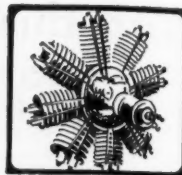
# HESS

**WELDED STEEL FURNACES  
INDOOR CLIMATE CONTROL  
SYSTEM**

Mention AMERICAN ARTISAN in your reply—Thank you!

## — HALL-NEAL — VICTOR

*The Furnace with Fins*



**FINS  
FOR EFFICIENCY**

THE fins build efficiency. They give the VICTOR 20% increased heating efficiency. We stand ready to prove this statement to any dealer who desires to sell the best, who desires to serve his community with a heating system economical and efficient to use.

WRITE FOR DETAILS

**HALL-NEAL FURNACE CO.**

1324 Capitol Avenue

Indianapolis, Ind.

## SILENTAIR

### AIR CONDITIONING UNITS

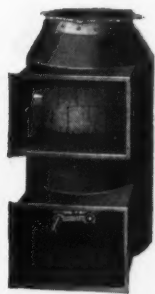
THE FAN      THE WASHER      THE FILTER

The tremendous success of SILENTAIR AIR CONDITIONING UNITS results, in no small measure, from the fact that they are MATCHED UNITS. Easily installed with any warm air furnace they bring splendid profit to dealers and comfort and economy to home owners. Write for descriptive literature.

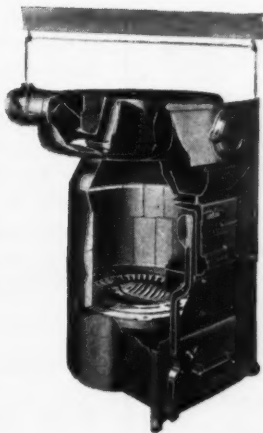
**A. GEHRI & CO., INC.**  
 Factory & Main Office - - - Tacoma, Washington  
 Eastern Sales Office & Warehouse, Baltimore Trust Bldg., Baltimore



IT IS DIFFERENT

**All Steel One Piece Drum**

Here we have the heart of the steel furnace, the large combustion chamber, the fire brick lining, the lack of joints and the strong and lasting construction of boiler plate furnaces, in fact, all the outstanding features which are causing the American public, more and more, to become steel furnace minded. And when we combine this type of drum with an all cast, return flue radiator, we reach the highest efficiency in furnace construction.

**UNIQUE AND ORIGINAL CONSTRUCTION**

IT IS BETTER

**All Cast One Piece Radiator**

And here we have the one piece, all cast, return flue radiator, which is the one feature of all cast furnaces that makes this type of furnace so popular. It is bolted to the drum securely (an asbestos gasket sealing the joint), and forms the only joint inside the casing. A direct flue is built into the radiator. This flue is controlled by a flue door which opens and closes automatically with the opening and closing of the feed door. There is no smoke, dust or gas with the new American.

"The American Combination Steel and Cast Furnace Sells Because It Is Different"

**THE AMERICAN FURNACE & FOUNDRY CO.**

MILAN, MICH.

# EXPENSIVE DISTRIBUTION IS THE CURSE OF BUSINESS!



*Brisbane*



**H**OW true this fits many a business institution who have operated on an economic spree, and are now burdened with a "White Elephant."

PEERLESS builds a complete heating equipment in their own modern factories. Also repairs for all makes of furnaces; hence, you buy a PEERLESS boiler plate furnace at a lower production cost, and a better heater.

**THE PEERLESS FOUNDRY CO.**

*Pioneers in Warm Air Heating Since 1895*

INDIANAPOLIS

INDIANA

Say you saw it in AMERICAN ARTISAN—Thank you!

?? ? ? ? ? ? ? ? ? ? ?

# Why

## do RYBOLT Dealers Get the Business...

Because the Rybolt is a well-known, quality, sturdily-built, dependable furnace that can be sold and installed at a price that people can afford and are willing to pay.

A one-piece radiator with smoke and clean out collars cast on . . . smooth, extra heavy, perfectly fitting castings of uniform thickness . . . and other advantages found only in costlier heating systems make the Rybolt a big value.

Write or wire—NOW—for details of our attractive proposition.

THE RYBOLT HEATER COMPANY

Cincinnati Ashland, Ohio Indianapolis



# RYBOLT

## FURNACES

# The

## NIAGARA

### DELUXE

### Is Far Easier to Sell!

Add the sterling beauty of the new Niagara Deluxe Furnace—its maroon crackle finish square casing, trimmed in ebony—the mechanical supremacy of all Niagara Furnaces—and you have a furnace of outstanding value—one that you'll find easier than ever to sell.

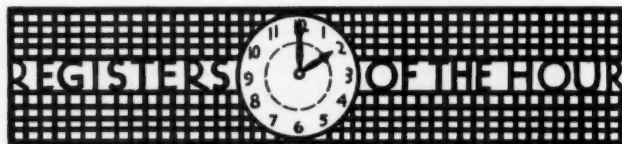


Write now for  
a complete  
description

THE FOREST CITY FOUNDRIES CO.  
2500 West 27th Street Cleveland, Ohio

# NIAGARA

## WARM AIR FURNACES



## AUER Quality Merchandise Is Your Satisfaction

There is an Auer Register and Grille for every need—the Colonial, Aueristocrat, Economy, and Pro-Tex-Wall—but the catalog will tell you better. Write for it today.

AUER REGISTER COMPANY

3608 Payne Avenue CLEVELAND, OHIO

## Only the New

### WATERBURY SEAMLESS FURNACE

REG. U.S. PAT. OFF. PIPE OR PIPELESS

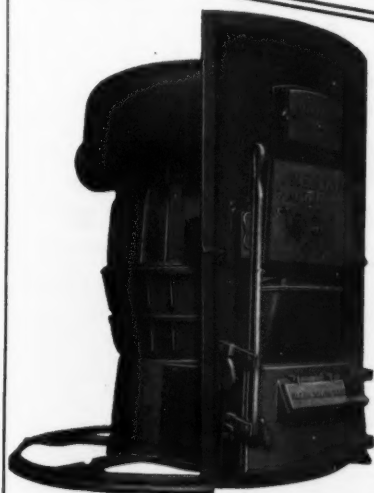
### Is Guaranteed Permanently Gas-Tight

The Waterman-Waterbury Co.

1122 Jackson Street N. E., Minneapolis, Minnesota

Say you saw it in AMERICAN ARTISAN—Thank you!

## Let US Help You Make Selling Easier!



### The Improved 1931 MELLOW FURNACE

*"America's  
perfect heating  
unit"*

#### SELLING FEATURES THAT COUNT

Main sections extending through front.	Fitted with disc-ground doors.	Hot Blast smoke con- sumer is regu- lar equipment.
--	--------------------------------------	---

#### DUPLEX GRATE

**LIBERTY FOUNDRY COMPANY**  
7600 Vulcan Street St. Louis, Mo.



## TO-DAY GAS IS THE HOUSEHOLD SERVANT

The convenience of gas as a household servant cannot be questioned. Its cleanliness, its efficiency and its ever readiness to serve make gas the important heating fuel of today.

With pipe lines—artificial and natural gas in practically every territory, the warm air heating contractor should be in a position to supply a real gas fired unit.

## THE one direct hook-up be- tween you and your customer is SYMONDS REGISTERS.

Say what you will—business originates with the ultimate consumer. Y not know this great business-getting register?

**"It's different than all the rest"**

*Write for Our New Catalog—No  
Better Time Than Now*

**SYMONDS REGISTER CO.** 3117-23 Minnesota Ave.  
ST. LOUIS, MISSOURI

*Genuine  
Agricola*

### REPAIR PARTS

To be sure of perfect fitting castings and parts, order only genuine AGRICOLA Repair Parts. Prompt shipments.

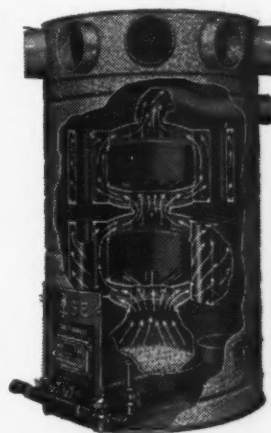
**AGRICOLA FURNACE CO., Inc.**  
Gadsden, Alabama  
Offices in principal cities



**WISE GAS FIRED**

ONE OF THE  
WISE  
BALANCED  
LINE

Here is a unit which operates efficiently and economically with gas as fuel. Its sturdy construction insures long life. Its scientific and engineered construction assures efficiency at all times under the most trying conditions. It is part of the foundation upon which WISE reputation has been built.



The WISE Gas Fired Furnace fills the spot. It is one of the Wise BIG 3 SERIES.

The WISE representative can show you why it is wise to become a WISE dealer.

Let him tell you about the WISE *BALANCED* LINE that you can sell at a profit and give satisfaction to the user.

**THE WISE FURNACE CO.**  
AKRON - - - OHIO

**WISE DEALERS SELL WISE FURNACES**

*Mention AMERICAN ARTISAN in your reply—Thank you!*



**RIVAL STRAP CORP.** 308 WEST 20th ST. NEW YORK, N. Y.

**The "RIVAL" and "FITRITE"**  
One-Piece Ornamental Leader Straps  
Patented July 10th, 1928; Jan. 6th, 1931



**BEWARE OF IMITATIONS**

"Fitrite" Adjustable Pipe Snow Guards  
Galvanized Iron or Bronze

**TYPE "X"**

Made in six styles. Write for folder showing complete line and sizes.  
**STRAPS SOLD THROUGH JOBBERS ONLY**

**"FITRITE" Bronze ROOF STRAINERS**  
3 Types. For Roofs having inside cast iron leader. Type "X" also made in Mal. Iron.

**"FITRITE" SKYLIGHT GEARING**



**"FITRITE" Bronze Beehive Strainer For Round Leader**  
3"-4"-5"-6"-7"-8" diameter

Iron or Bronze  $\frac{3}{8}$ "- $\frac{1}{2}$ " and 1" sizes.  
Made also for chain operation

Write Dept. "A" for full details and prices. Telephone: CHelsea 3-2400

**DAVID LEVOW** 308 WEST 20" ST. NEW YORK

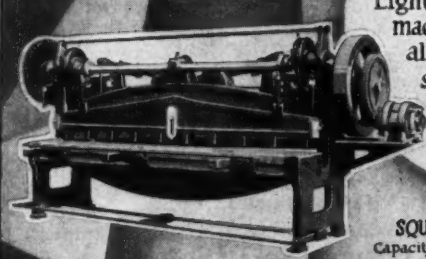
**The Sign that Builds Business**

**MASTER METAL WORKER**

**TONCAN**  
COPPER MOLYBDENUM IRON  
FOR QUALITY SHEET METAL WORK  
**UNEQUALED FOR ENDURANCE**

**REPUBLIC STEEL CORPORATION**  
GENERAL OFFICES  YOUNGSTOWN, OHIO

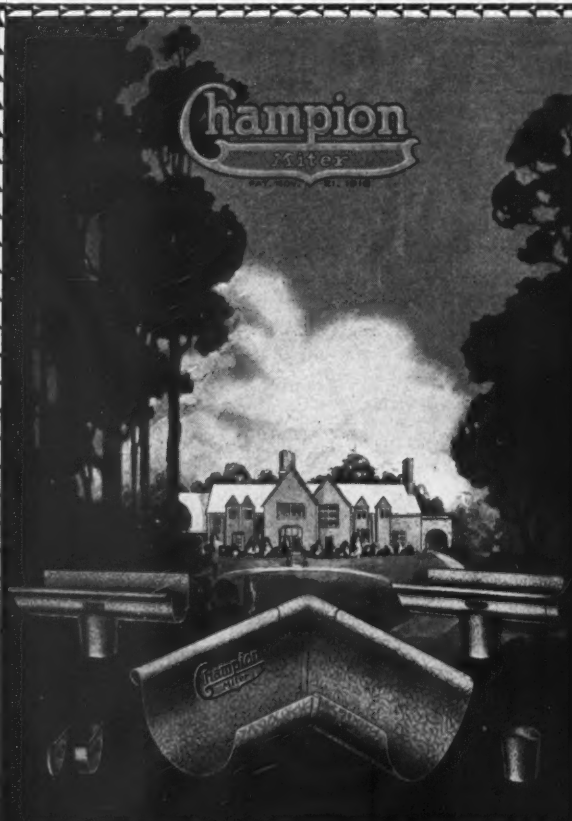
**Our Line**  
Light and heavy machinery for all classes of sheet metal, plate and structural work.



**SQUARING SHEAR**  
Capacity 10' x 10' & 12' x 12' gap

**BERTSCH & CO.**  
Cambridge City, Indiana

**Champion**  
Filter

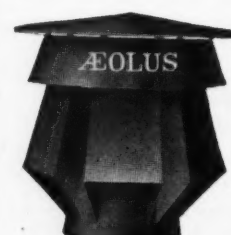


**BRADEN MFG. CO. TERRE HAUTE, IND.**

**Install** **ÆOLUS**  
*Improved*  
**VENTILATORS**

FOR industrial buildings, schools, homes, theaters, etc.  
Made in 14 different metals.  
Constant ventilation—no noise—no upkeep.

**ÆOLUS DICKINSON**  
Industrial Division of Paul Dickinson, Inc.  
3332-52 South Artesian Avenue  
Chicago, Ill.



**CHICAGO**



**Box and Pan Brake** **Power Squaring Shear**

**STEEL BRAKES—PRESSES—SHEARS**

**DREIS & KRUMP MFG. CO.**  
7404 LOOMIS BLVD. CHICAGO

## FURNACE POKERS STRAIGHT OR BENT POINT

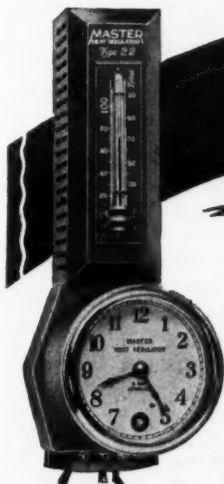
Plain or Japanned

$\frac{1}{2}$ "— $\frac{5}{8}$ " and  $\frac{3}{4}$ " diameter

Lengths from 3 to 6 foot

DEPT. F

**FANNER MANUFACTURING CO.**  
BROOKSIDE PARK CLEVELAND, OHIO



## MASTER HEAT REGULATOR

Type 22

**FULL ELECTRIC**

NOTHING to forget. Instant, close regulation on changes of one degree or less. 8-Day jewelled clock control, \$80; plain \$55. Both full electric. Also Gradual Operation models.

Write today for details and discounts

**WHITE MFG. CO.**

2362 University Ave. St. Paul, Minn.

You can now heat with fresh air as economically as with recirculated air—and better.

## FRESHHAIRE HEATING SYSTEM

Write for details

**GENERAL HEATING COMPANY**  
St. Paul, Minn.



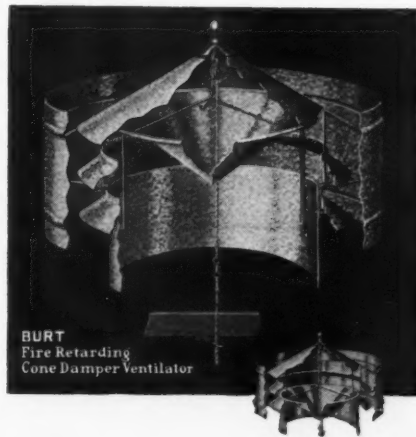
## YOUNG REGULATOR

**A Locking and Indicating  
Device for Air Conditioning  
and Ventilating Systems**

Controls the volume of air flow through duct—the simplest and most effective method of controlling and showing position of volume damper. Positively tamperproof. Made of rust-resisting metals. Exclusive patented features. Write for catalog.

**THE YOUNG VENTILATING CO.**

2703 Woodland Avenue • Cleveland, Ohio



BURT  
Fire Retarding  
Cone Damper Ventilator

## WIDE WIND BAND

The extra wide wind band on the Burt Cone Damper ventilator not only makes it absolutely stormproof but also creates a large low pressure area which assures a high capacity. It is the most versatile of stationary ventilators and embodies many desirable features in its design.

**The BURT MFG. Co.**

Ventilators-Oil Filters-Exhaust Heads  
930 S. HIGH ST. AKRON, OHIO

## NEW WHITNEY LEVER PUNCH



Punch No. 4-B

Drop Forged—Parts Heat Treated  
Punches and Dies Interchangeable with  
Our No. 4 Punch

This new punch is the only punch on the market offering all of the following advantages.

Power— $\frac{1}{4}$  inch through 16 Gauge.  
Deep Throat—2 inches.  
Balance—natural Grip Handles Give  
Perfect Balance.  
Weight—3 pounds.  
Length—8 $\frac{1}{2}$  inches.

Ask Your Jobber

**W. A. WHITNEY MFG. CO.**

Established 1908

636 RACE STREET  
ROCKFORD, ILL.

*The Choice of* **OVER 5000** *Satisfied Users*

Mention AMERICAN ARTISAN in your reply—Thank you!

# ~ MARKET QUOTATIONS ~

AMERICAN ARTISAN is the only publication quoting Prices on Metals, Sheet Metal Equipment and Supplies, Warm Air Heating Supplies and Accessories, corrected bi-weekly. These quotations are not guaranteed but are obtained from reliable sources and reflect nation-wide market conditions at the time of going to press.

NOTE—These prices are Chicago Warehouse Prices, to which must be added territory differentials

## METALS

### PIG IRON

Chicago Fdy., No. 2	\$17.50
Southern Fdy., No. 2	17.01
Lake Superior Charcoal	27.04
Malleable	17.50

### FIRST QUALITY BRIGHT CHARCOAL TIN PLATES

IC 20x28 112 sheets	\$23.80
IX 20x28 112 sheets	27.45
IXX 20x28 56 sheets	14.95
IXXX 20x28 112 sheets	16.10
IXXXX 20x28 112 sheets	17.35

### TERNE PLATES

IC 20x28, 40-lb. 112 sheets	\$22.50
IX 20x28, 40-lb. 112 sheets	25.00
IC 20x28, 25-lb. 112 sheets	19.60
IX 20x28, 25-lb. 112 sheets	22.10
IC 20x28, 20-lb. 112 sheets	18.25
IX 20x28, 20-lb. 112 sheets	20.75

### "ARMCO" INGOT IRON PLATES

No. 8 ga.—110 lbs.	\$4.15
3/16 in.—100 lbs.	4.05
1/4 in.—100 lbs.	3.85

### COKE PLATES

Cokes, 80 lbs., base, 20x28	\$12.00
Cokes, 90 lbs., base, 20x28	12.20
Cokes, 100 lbs., base, 20x28	13.75
Cokes, 107 lbs., base, 10,	12.75
20x28	
Cokes, 135 lbs., base, IX,	14.75
20x28	
Cokes, 155 lbs., base 2X,	8.50
56 sheets	
Cokes, 175 lbs., base, 3X,	9.35
56 sheets	
Cokes, 195 lbs., base, 4X,	10.25
56 sheets	

### HOT ROLLED ANNEALED SHEETS

Base 10 ga.—per 100 lb.	\$3.25
"Armco" 10 ga.—per 100 lbs.	4.15

### HOT ROLLED ANNEALED SHEETS 16 GA. AND HEAVIER

No. 18	per 100 lbs. \$3.25
No. 20	per 100 lbs. 3.35
No. 22	per 100 lbs. 3.45
No. 24	per 100 lbs. 3.55
No. 26	per 100 lbs. 3.65
No. 27	per 100 lbs. 3.70
No. 28	per 100 lbs. 3.80

### GALVANIZED

No. 16	per 100 lbs. \$3.70
No. 18	per 100 lbs. 3.80
No. 20	per 100 lbs. 3.90
No. 22	per 100 lbs. 4.00

(Standard differentials on extras to apply)

No. 24	per 100 lbs. \$4.10
No. 26	per 100 lbs. 4.35
No. 27	per 100 lbs. 4.45
No. 28	per 100 lbs. 4.60
"Armco" 24	per 100 lbs. 5.75

### BAR SOLDER

Warranted 50-50	per 100 lbs. \$19.25
45-55	per 100 lbs. 17.00
48-52	per 100 lbs. 17.75
Plumbers'	per 100 lbs. 15.50

### ZINC

In Slabs	\$5.00
----------	--------

### SHEET ZINC

Cask Lots (600 lbs.)	\$12.00
Sheet Lots (100 lbs.)	13.00

### BRASS

Sheets, Chicago base	16 1/2 c
Tubing, seamless, Chicago base	20 1/2 c
Wire, Chicago base	16 1/2 c
Rods, Chicago base	13 1/2 c

## COPPER

Sheets, Chicago base	18 1/2 c
Tubing, seamless, Chicago base	20 1/2 c
Wire, plain rd., 8 B. & S. Ga. and heavier	12 1/2 c

## LEAD

American Pig	\$6.00
Bar	7.50

## TIN

Bar Tin	per 100 lbs. \$33.00
Pig Tin	per 100 lbs. 32.00

## SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES

### ASBESTOS

Paper up to 1/16	6c per lb.
Roll board	6 1/2 c per lb.
Mill board, 3/32 to 1/2	6 1/2 c per lb.
Corrugated paper (250 sq. ft. per roll)	\$4.25 per roll
Pipe joint tape, per 500 lineal feet	\$1.50

### ASBESTOS SEGMENTS

8 in.	per 25 sets \$1.50
9 in.	per 25 sets 1.75
10 in.	per 25 sets 2.00
12 in.	per 25 sets 2.50

### CEMENT, FURNACE

5-lb. cans, net	\$0.40
10-lb. cans, net	0.50
25-lb. cans, net	2.00
Per 100 lbs.	7.50

## CLIPS

Damper	
No-Rivet Steel, with tail pieces	
per gross	\$8.25
Rivet Steel, with tail pieces,	
per gross	7.50
Tail pieces, per gross	2.00

## COPPER FOOTING

Copper Footing	43 %
----------------	------

## CORNICE BRAKES

Chicago Steel Bending	
No. 1 to 6B	Net

## CUT-OFFS

Gal. plain, round or cor. rd.	
26 gauge	30 %
28 gauge	35 %

## DAMPERS

Yankee Warm Air	
7 inch, doz.	\$1.60
8 inch, doz.	2.20
9 inch, doz.	2.80
10 inch, doz.	3.50
12 inch, doz.	3.50
14 inch, doz.	5.00

## EAVES TROUGH

Galv. Crimpedge, crated	75-15 %
Zinc	60 %

## ELBOWS

Conductor Pipe	
Galv. plain or corrugated, round flat Crimp.	
28 gauge	60-10 %
26 gauge	60 %
24 gauge	15 %

## Galvanized Terne Steel

Plain Rd. and Rd. Corr.	
28 gauge	60-10 %
26 gauge	50 %
24 gauge	15 %

## Square Corrugated

28 gauge	55 %
26 gauge	40 %

## Portico Elbows

Standard Gauge Conductor Pipe, plain or corrugated.	
Not nested	70 & 5 %
Nested solid	70 & 5 %

## Sq. Corr., A. & B. & Octagon

28 gauge	55 %
26 gauge	40 %

## Portico

1, 1 1/4, 1 1/2 inch	45 %
----------------------	------

## Copper

16 oz., all designs	50 %
---------------------	------

## Zinc

All styles	60 %
------------	------

## ELBOWS—Stove Pipe

1-piece Corrugated, Uniform Blue	
No. 28 Gauge.	Doz.
5 inch	\$1.15
6 inch	1.25
7 inch	1.75

## Adjustable—Uniform Blue

No. 28 Gauge, Uniform Blue.	
5 inch	\$1.60
6 inch	1.75
7 inch	2.10

## WOOD FACES—60 % off list.

## FIRE POTS

No. 02 Gasoline Torch, 1 qt.	\$ 5.13
No. 9250, Kerosene or Gasoline Torch, 1 qt.	6.50
No. 10 Tinner's Furnace Square tank, 1 gal.	11.20
No. 15 Tinner's Furnace Round tank, 1 gal.	10.70
No. 21 Gas Soldering Furnace.	8.60
No. 110 Automatic Gas Soldering Furnace	10.50

## GLASS

Single and Double Strength, A, all brackets	85 %
Single and Double Strength, B, all brackets	87 %

## HANGERS

Conductor Pipe	
Milcor Perfection Wire	25 %
Milcor Triplex Wire	10 %

## Eaves Trough

Steel (galv. after forming), from list	45 %
Selflock E. T. Wire, List	10 %

## HOOKS

Conductor	
"Direct Drive" Wrought Iron, for wood or brick	15 %

## MITRES

Galvanized Steel Mitres	
28 gauge	70-15 %
26 gauge	70-5 %

## PASTE

### Asbestos Dry Paste

200-lb. barrel	\$15.00
100-lb. barrel	7.75
50-lb. barrel	4.50
25-lb. pail	2.50
10-lb. bag	1.20
5-lb. bag	.60

## Galvanized PIPE

Crated and nested (all gauges)	75-12 1/2 %
Crated and not nested (all gauges)	75-7 1/2 %

## Furnace Pipe

Double Wall Pipe and Fittings	60 %
Single Wall Pipe, Round Galvanized Pipe	60 %
Galvanized and Tin Fittings	60 %

## Lead

Per 100 lbs.	\$12.50
Stove Pipe	
"Milcor" "Titelock" Uniform Blue	
28 gauge, 5 inch U. C.	
nested	\$10.00
28 gauge, 6 inch U. C.	
nested	11.00
28 gauge, 7 inch U. C.	
nested	13.00
30 gauge, 5 inch U. C.	9.25
30 gauge, 6 inch U. C.	
nested	10.00
30 gauge, 7 inch U. C.	
nested	12.00

## T-Joint Made Up

6-inch, 28 gauge	per doz. \$3.40
------------------	-----------------

## REGISTERS AND FACES

Floor Registers	
Steel and Semi-Steel	40 & 10 %
All Cast Iron	20 %

## Baseboard

2-Piece	40 & 10 %
1-Piece	40-10 & 20 %

## Adjustable Ventilators

Adjustable Ventilators	40 & 10 %
------------------------	-----------

## COLD AIR FACES

Steel and Cast, less than 14" width	40 & 10 %
Steel, 14" and wider	65 & 10 %
Cast, 14" and wider	60 & 10 %
Special Cold Air Faces, Steel or Cast	40 & 10 %

## RIDGE ROLL

Galv., Plain Ridge Roll, b'd'd	75-15-5 %
Galv., Plain Ridge Roll, crated	75-15 %

## SCREWS

Sheet Metal	
7, 1/2 x 3/4, per gross	\$0.52
No. 10, 3/4 x 3/16, per gross	0.68
No. 14, 1/2 x 1/4, per gross	0.88

## SHEARS, TINNERS' AND MACHINISTS'

Viking	\$22.00
Lennox Throatless	
No. 18	35 %
Shear blades (F.o.b. Marshalltown, Iowa)	10 %

## SHOES

Galv. 28 Gauge, Plain or Corrugated, round flat crimp	60-10 %
26 gauge, round flat crimp	50 %
24 gauge, round flat crimp	15 %

## SNIPS

Tinners'	Net
----------	-----

## VENTILATORS

Standard	30 to 40 %
Milcor	Net



THE re-organized and re-financed company is making good on all its pledges. Dealers everywhere are finding the unlimited co-operations given a sure means towards success. You too can build toward success with Giltedge.

SCHWAB FURNACE & MFG. CO.

MILWAUKEE OFFICE

**GILTEDGE**

The Furnace  
with a  
**GOOD**  
Name

GILTEDGE Furnaces are constructed so as to give maximum efficiency and a life time of service.

CEDAR GROVE, WISCONSIN

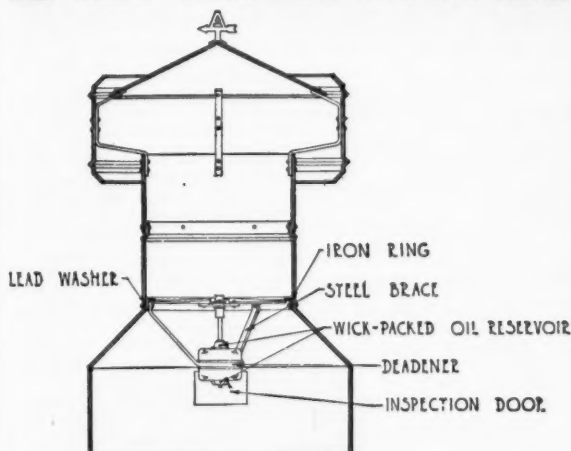
522 CHERRY STREET

*Write for our catalog  
and dealers' Profit-sharing proposition*

**JORDAN AERO**

VENTILATION

**F-DIRECT CONNECTED-FAN VENTILATOR**



A Unit for greater efficiency.  
Combining gravity, ventilator and fan action.  
Eliminating wind and weather hazard.

Backed by a complete engineering service

**PAUL R. JORDAN & CO.**

630 South Delaware St.

Indianapolis, Ind.

**THE RIVAL!**

**EAVES TROUGH  
HANGER**

A heavy, easily adjusted hanger made in four sizes, 4", 4½", 5" and 6", and of copper or galvanized iron. Each hanger is subjected to a most rigid inspection so that uniform quality is assured at all times.

They are shipped in compact heavy corrugated cardboard cartons.

If you are interested in rigid construction, quick, easy adjustment, sure locked bead, and low price, then order The "Rival."

Sold By Leading Jobbers

**BERGER BROS. CO.**  
229-231 ARCH ST.  
PHILADELPHIA, PA.

140 S. Dearborn St.  
CHICAGO

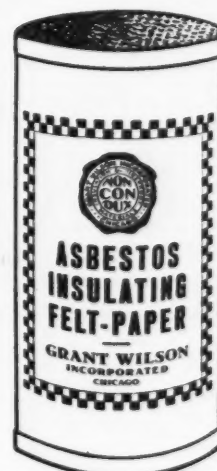
WRITE  
FOR OUR  
CATALOG

**ASBESTOS**  
**PAPER**  
**TAPE SEGMENTS**

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# BUYERS' DIRECTORY

## Air Cleaners

American Fdy. & Furnace Co.,  
Bloomington, Ill.  
Independent Air Filter Co.,  
Chicago, Ill.  
Kleenaire Filter Co.,  
Stevens Point, Wis.  
Lakeside Co.,  
Hermansville, Mich.  
Meyer & Bro., F.,  
Peoria, Ill.  
Watt Mfg. Co.,  
Sterling, Ill.

## Air Washers

American Machine Products Co.,  
Marshalltown, Iowa  
Brundage Co.,  
Kalamazoo, Mich.  
A. Gehri & Co.,  
Tacoma, Wash.  
Health Air Systems, Ann Arbor, Mich.  
Watt Mfg. Co.,  
Sterling, Ill.

## Asbestos—Liquid

Technical Products Co., Pittsburgh, Pa.

## Asbestos Covering and Paper

Standard Asbestos Co. of Chicago,  
Chicago, Ill.  
Wilson, Grant, Inc.,  
Chicago, Ill.

## Ash Sifter

Diener Mfg. Co., G. W., Chicago, Ill.

## Blast Gates

Berger Bros. Co., Philadelphia, Pa.

## Blowers

American Fdy. & Furnace Co.,  
Bloomington, Ill.  
American Machine Products Co.,  
Marshalltown, Iowa  
Brundage Co.,  
Kalamazoo, Mich.  
Emerson Elec. Mfg. Co.,  
St. Louis, Mo.  
A. Gehri & Co.,  
Tacoma, Wash.  
Health-Air Systems, Ann Arbor, Mich.  
Henry Furnace & Fdy. Co.,  
Cleveland, Ohio  
Lakeside Co.,  
Hermansville, Mich.  
Watt Mfg. Co.,  
Sterling, Ill.

## Bolts—Stove

Ryerson & Son, Inc., Joa. T.,  
Chgo., N. Y., St. L., Det., Cleve.

## Brakes—Bending

Dreis & Krump Mfg. Co., Chicago, Ill.  
Interstate Machinery Co., Chicago, Ill.  
Peck, Stow & Wilcox Co.,  
Southington, Conn.  
Ryerson & Son, Inc., Joa. T.,  
Chgo., N. Y., St. L., Det., Cleve.

## Brakes—C cornice

Dreis & Krump Mfg. Co., Chicago, Ill.

## Brass and Copper

American Brass Co., Waterbury, Conn.  
Revere Copper and Brass Inc.,  
Rome, N. Y.

## Cans—Garbage

Diener Mfg. Co., G. W., Chicago, Ill.

## Castings—Malleable

Fanner Mfg. Co., Cleveland, Ohio

## Cast Iron Smoke Pipe

Sternaman, Springfield, Ill.

## Ceilings—Metal

Globe Iron Roofing and Corrugating  
Co.,  
Cincinnati, Ohio  
Milcor Steel Co.,  
Mil., Canton, Chgo., LaCrosse, K. C.

## Chaplets

Fanner Mfg. Co., Cleveland, Ohio

## Cleaners—Vacuum (See Furnace Cleaners)

## Conductor Elbows and Shoes

Acme Tin Plate & Rfg. Supply Co.,  
Philadelphia, Pa.  
Barnes Metal Products Co.,  
Chicago, Ill.  
Berger Bros. Co.,  
Philadelphia, Pa.  
Globe Iron Roofing & Corrugating Co.,  
Cincinnati, Ohio  
Milcor Steel Co.,  
Mil., Canton, Chgo., LaCrosse, K. C.

## Conductor Fittings

Acme Tin Plate & Rfg. Supply Co.,  
Philadelphia, Pa.  
Barnes Metal Products Co.,  
Chicago, Ill.  
Berger Bros. Co.,  
Philadelphia, Pa.  
Braden Mfg. Co.,  
Terre Haute, Ind.  
Globe Iron Roofing & Corrugating Co.,  
Cincinnati, Ohio  
David Levow,  
New York, N. Y.  
Milcor Steel Co.,  
Mil., Canton, Chgo., LaCrosse, K. C.  
Rival Strap Corp.,  
New York, N. Y.

## Conductor Pipe

Acme Tin Plate & Rfg. Supply Co.,  
Philadelphia, Pa.  
Barnes Metal Products Co.,  
Chicago, Ill.  
Berger Bros. Co.,  
Philadelphia, Pa.  
Globe Iron Roofing & Corrugating Co.,  
Cincinnati, Ohio  
Milcor Steel Co.,  
Mil., Canton, Chgo., LaCrosse, K. C.

## Copper

American Brass Co., Waterbury, Conn.  
Revere Copper & Brass Inc.,  
Rome, N. Y.

## Cornices

Globe Iron Roofing & Corrugating Co.,  
Cincinnati, Ohio  
Milcor Steel Co.,  
Mil., Canton, Chgo., LaCrosse, K. C.

## Crimping Machines

Bertsch & Co., Cambridge City, Ind.  
Yoder Co., The,  
Cleveland, Ohio

## Cut-offs—Rain Water

Milcor Steel Co.,  
Mil., Canton, Chgo., LaCrosse, K. C.

## Dampers—Quadrants— Accessories

Acme Tin Plate & Rfg. Supply Co.,  
Philadelphia, Pa.  
Aeolus Dickinson,  
Chicago, Ill.  
Hart & Cooley Co.,  
Holland, Mich.  
Hovos Co., S. M.,  
Boston, Mass.  
Milcor Steel Co.,  
Mil., Canton, Chgo., LaCrosse, K. C.  
Parker-Kalon Corp.,  
New York, N. Y.  
Young Ventilating Co.,  
Cleveland, Ohio

## Dampproofings

Lastik Products Corp., Pittsburgh, Pa.

## Diffusers—Air Duct

Aeolus Dickinson, Chicago, Ill.

## Draft Stabilizers

Silent Automatic Corp., Detroit, Mich.

## Drills—Electric

Osborn Co., J. M. & L. A.,  
Cleveland, Ohio

## Drive Screws—Hardened Metallic

Parker-Kalon Corp., New York

## Eaves Trough

Acme Tin Plate & Rfg. Supply Co.,  
Philadelphia, Pa.  
Barnes Metal Products Co.,  
Chicago, Ill.  
Berger Bros. Co.,  
Philadelphia, Pa.  
Globe Iron Roofing & Corrugating Co.,  
Cincinnati, Ohio  
Milcor Steel Co.,  
Mil., Canton, Chgo., LaCrosse, K. C.

## Eaves Trough Hangers

Acme Tin Plate & Rfg. Supply Co.,  
Philadelphia, Pa.  
Berger Bros. Co.,  
Philadelphia, Pa.  
Mil., Canton, Chgo., LaCrosse, K. C.

## Fans—Exhaust

Emerson Elec. Mfg. Co.,  
St. Louis, Mo.

## Fans—Ventilating

Emerson Elec. Mfg. Co.,  
St. Louis, Mo.

## Fluxes—Soldering

Kester Solder Co.,  
Chicago, Ill.  
Ryerson & Son, Inc., Joa. T.,  
Chgo., N. Y., St. L., Det., Cleve.

## Forming Rolls

Bertsch & Co., Cambridge City, Ind.  
Interstate Machinery Co.,  
Chicago, Ill.

## Furnace Cement

Connors Paint Mfg. Co., Wm.,  
Troy, N. Y.  
Lastik Products Corp., Pittsburgh, Pa.  
Milcor Steel Co.,  
Mil., Canton, Chgo., LaCrosse, K. C.  
Technical Products Co., Pittsburgh, Pa.

## Furnace Chain

Hart & Cooley Co., Holland, Mich.

## Furnace Cleaners—Suction

Baker Furnace Co., Toledo, Ohio  
Brillion Furnace Co., Brillion, Wis.  
Densmore & Quinlan Co.,  
Kenosha, Wis.  
Grand Rapids Furnace Cleaner Co.,  
Grand Rapids, Mich.

## Furnace Door Handles

Fanner Mfg. Co., Cleveland, Ohio

## Furnace Fans

A-C Mfg. Co., Pontiac, Ill.  
American Fdy. & Furnace Co.,  
Bloomington, Ill.  
Emerson Electric Mfg. Co.,  
St. Louis, Mo.  
A. Gehri & Co.,  
Tacoma, Wash.

## Furnace Filters

A. Gehri & Co., Tacoma, Wash.  
Independent Air Filter Co.,  
Chicago, Ill.  
Kleenaire Filter Co.,  
Stevens Point, Wis.  
Lakeside Co.,  
Hermansville, Mich.

## Furnace Pipe and Fittings

Henry Furnace & Fdy. Co.,  
Cleveland, Ohio  
Meyer & Bro., F.,  
Peoria, Ill.  
Milcor Steel Co.,  
Mil., Canton, Chgo., LaCrosse, K. C.  
Osborn Co., The J. M. & L. A.,  
Cleveland, Ohio  
Peerless Foundry Co.,  
Indianapolis, Ind.  
Williamson Heater Co.,  
Cincinnati, Ohio

## Furnace Pokers

Fanner Mfg. Co., Cleveland, Ohio  
Independent Reg. & Mfg. Co.,  
Cleveland, Ohio

## Furnace Pulleys

Hart & Cooley Co., Holland, Mich.

## Furnace Regulators

Hart & Cooley Co., Holland, Mich.  
Lakeside Co.,  
Hermansville, Mich.  
Minneapolis-Honeywell Regulator Co.,  
Minneapolis, Minn.  
Modern Heat Regulator Co.,  
Cleveland, Ohio  
White Mfg. Co.,  
Minneapolis, Minn.

## Furnace Rings

Forest City Foundries Co.,  
Cleveland, Ohio

## Furnace and Stove Repairs

A. G. Brauer Supply Co., St. Louis  
Northwestern Stove Repair Co.,  
Chicago  
Peerless Fdry. Co., Indianapolis, Ind.

## Furnaces for Gas or Oil

Dall Steel Products Co., Lansing, Mich.  
Health-Air Systems, Ann Arbor, Mich.

## Furnaces—Gas

American Fdy. & Furnace Co.,  
Bloomington, Ill.  
American Furnace Co.,  
St. Louis, Mo.  
Henry Furnace & Foundry Co.,  
Cleveland, Ohio  
Lennox Furnace Co.,  
Marshalltown, Iowa  
Meyer Furnace Co.,  
Peoria, Ill.  
Payne Furnace and Supply Co.,  
Beverly Hills, Calif.  
Round Oak Furnace Co.,  
Dowagiac, Mich.  
Western Steel Products Co.,  
Duluth, Minn.  
Wise Furnace Co.,  
Akron, Ohio

## Furnaces—Gas Auxiliary

Forest City Foundries Co.,  
Cleveland, Ohio

## Furnaces—Oil Burning

Motor Wheel Corp., Heater Div.,  
Lansing, Mich.

## Furnaces—Warm Air (See Also Unit Air Conditioners)

Acme Tin Plate & Rfg. Supply Co.,  
Philadelphia, Pa.  
Agricola Furnace Co.,  
Gadsden, Ala.  
American Fdy. & Furnace Co.,  
Bloomington, Ill.  
American Furnace & Fdy. Co.,  
Milan, Mich.  
American Furnace Co.,  
St. Louis, Mo.  
Armstrong Furnace Co.,  
Columbus, O.  
Brillion Furnace Co.,  
Brillion, Wis.  
Dall Steel Products Co.,  
Lansing, Mich.  
Deshler Foundry & Machine Works,  
Deshler, Ohio  
Enterprise Boiler & Tank Works,  
Chicago, Ill.  
Forest City Foundries Co.,  
Cleveland, Ohio  
General Heating Co.,  
St. Paul, Minn.  
Graff Furnace Co.,  
Scranton, Pa.  
Hall-Neal Furnace Co.,  
Indianapolis, Ind.  
Health-Air Systems, Ann Arbor, Mich.  
Henry Furnace & Fdy. Co.,  
Cleveland, Ohio  
Hess Warming & Vent Co.,  
Chicago, Ill.  
Lennox Furnace Co.,  
Marshalltown, Iowa  
Liberty Foundry Co.,  
St. Louis, Mo.  
May Fieberger Furnace Co.,  
Newark, Ohio  
Meyer Furnace Co.,  
The, Peoria, Ill.  
Midland Furnace Co.,  
Cleveland, Ohio  
Motor Wheel Corp., Heater Div.,  
Lansing, Mich.  
Mt. Vernon Furnace & Mfg. Co.,  
Mt. Vernon, Ill.  
Payne Furnace & Supply Co.,  
Beverly Hills, Calif.  
Peerless Foundry Co.,  
Indianapolis, Ind.  
Premier Warm Air Heater Co.,  
Dowagiac, Mich.  
Round Oak Furnace Co.,  
Dowagiac, Mich.  
Rybolt Heater Co.,  
Ashland, Ohio  
Schwab Furnace & Mfg. Co.,  
Cedar Grove, Wis.  
U. S. Furnace Co.,  
Youngstown, Ohio  
Waterman-Waterbury Co.,  
Minneapolis, Minn.  
Western Steel Products Co.,  
Duluth, Minn.  
Williamson Heater Co.,  
Cincinnati, O.  
Wise Furnace Co.,  
Akron, Ohio

## Grilles

Auer Register Co.,  
Cleveland, Ohio  
Chicago Perforating Co.,  
Chicago, Ill.  
Harrington & King Perforating Co.,  
Chicago, Ill.  
Hart & Cooley Mfg. Co.,  
Chicago, Ill.  
Independent Register & Mfg. Co.,  
Cleveland, Ohio  
Tuttle & Bailey Mfg. Co.,  
New York  
U. S. Register Co.,  
Battle Creek, Mich.

## Guards—Machine and Belt

Chicago Perforating Co.,  
Chicago, Ill.  
Harrington & King Perforating Co.,  
Chicago, Ill.

## Handles—Boiler

Berger Bros. Co., Philadelphia, Pa.

## Handles—Soldering Iron

Parker-Kalon Corp., New York, N. Y.

## Heat Regulators

Hart & Cooley Mfg. Co.,  
Chicago, Ill.  
Minneapolis-Honeywell Regulator Co.,  
Minneapolis, Minn.  
Modern Heat Regulator Co.,  
Cleveland, Ohio  
White Mfg. Co.,  
Minneapolis, Minn.

## Heaters—Cabinet

Agricola Furnace Co.,  
Gadsden, Ala.  
Motor Wheel Corp., Heater Division,  
Lansing, Mich.  
Mt. Vernon Furnace & Mfg. Co.,  
Mt. Vernon, Ill.  
Payne Furnace & Supply Co.,  
Beverly Hills, Calif.  
Premier Warm Air Heater Co.,  
Dowagiac, Mich.  
Waterman-Waterbury Co.,  
Minneapolis, Minn.

## Heaters—School Room

Meyer Furnace Co.,  
The, Peoria, Ill.  
Waterman-Waterbury Co.,  
Minneapolis, Minn.  
Western Steel Products Co.,  
Duluth, Minn.

## Humidifiers

Automatic Humidifier Co.,  
Cedar Falls, Iowa  
Clarm Mechanical Devices Co.,  
Lima, Ohio  
Columbus Humidifier Co.,  
Columbus, Ohio  
Diener Mfg. Co.,  
G. W., Chicago, Ill.  
Meyer & Bro. Co.,  
F., Peoria, Ill.  
Sallada Mfg. Co.,  
Minneapolis, Minn.

(Continued on page 46)

## **-QUICK- REPAIR PART SERVICE**

Save money and time by ordering all your repairs for furnaces, stoves or oil-stoves from us.

*Any part for any  
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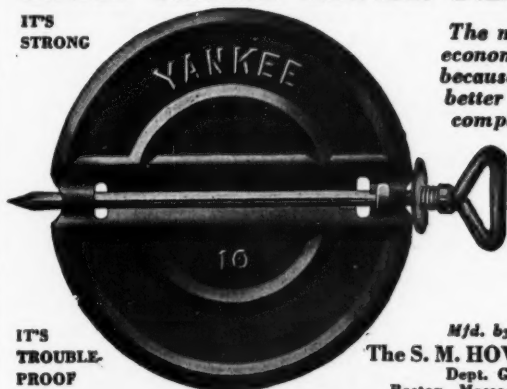
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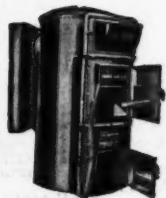


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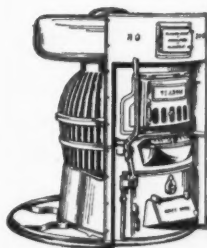
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The Western Steel Furnace has made many friends among your prospective customers and will make many more if you show them its numerous advantages.

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*Mt. Vernon Furnace & Mfg. Co.  
Mt. Vernon, Illinois*

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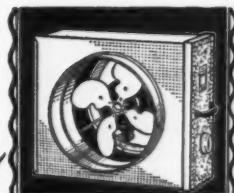


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*Thermostatically  
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HEAT BOOSTER**

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A fuel saver and generating machine of the finest quality made at the price.

**GEO. W. DIENER MFG. CO.**  
404 North Monticello Ave. Chicago



# BUYERS' DIRECTORY

(Continued from page 44)

**Machinery—Culvert**

Bertsch & Co., Cambridge City, Ind.  
Interstate Machinery Co., Chicago, Ill.

**Machinery—Rebuilt**

Interstate Machinery Co., Chicago, Ill.

**Machines and Tools—Tinsmith's**  
Bertsch & Co., Cambridge City, Ind.  
Dreis & Krump Mfg. Co., Chicago, Ill.  
Interstate Machinery Co., Chicago, Ill.  
Marshalltown Mfg. Co., Marshalltown, Iowa

Niagara Mach. & Tool Wvks., Buffalo, N. Y.  
Parker-Kalon Corp., New York, N. Y.  
Peck, Stow & Wilcox Co., Southington, Conn.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.  
Viking Shear Co., Erie, Pa.  
Whitney Mfg. Co., W. A., Rockford, Ill.  
Yoder Co., The, Cleveland, Ohio

**Metal Lath—Expanded**

Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.

**Miters**

Barnes Metal Products Co., Chicago, Ill.  
Berger Bros. Co., Philadelphia, Pa.  
Braden Mfg. Co., Terre Haute, Ind.  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.

**Motors—Electric**

Emerson Elec. Mfg. Co., St. Louis, Mo.

**Nails—Hardened Masonry**

Parker-Kalon Corp., New York, N. Y.

**Oil Burners**

Laco Oil Burner Co., Griswold, Iowa  
Northern Oil Burners Inc., Minneapolis, Minn.  
Silent Automatic Corp., Detroit, Mich.

**Paint**

Connors Paint Mfg. Co., Wm., Troy, N. Y.

**Perforated Metals**

Chicago Perforating Co., Chicago  
Harrington & King Perforating Co., Chicago, Ill.

**Pipe—Cast Iron Smoke**

Sternaman, Springfield, Ill.

**Punches**

Bertsch & Co., Cambridge City, Ind.  
Interstate Machinery Co., Chicago, Ill.  
Parker-Kalon Corp., New York, N. Y.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.  
W. A. Whitney Mfg. Co., Rockford, Ill.

**Punches—Combination Bench and Hand**  
Parker-Kalon Corp., New York, N. Y.

**Punches—Hand**

Parker-Kalon Corp., New York, N. Y.  
W. A. Whitney Mfg. Co., Rockford, Ill.

**Putty-Stove**

Connors Paint Mfg. Co., Wm., Troy, N. Y.

**Radiator Cabinets**

Hart & Cooley Mfg. Co., New Britain, Conn.

**Registers—Warm Air**

Auer Register Co., Cleveland, Ohio  
Forest City Foundries Co., Cleveland, Ohio  
Hart & Cooley Co., Holland, Mich.  
Henry Furnace & Fdy. Co., Cleveland, Ohio  
Independent Register & Mfg. Co., Cleveland, Ohio  
Meyer & Bro., F., Peoria, Ill.  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.  
Rock Island Register Co., Rock Island, Ill.  
Symonds Register Co., St. Louis, Mo.  
United States Register Co., Battle Creek, Mich.

**Registers—Wood**

Auer Register Co., Cleveland, Ohio  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.

**Repairs—Stove and Furnace**

Brauer Supply Co., A. G., St. Louis, Mo.  
Northwestern Stove Repair Co., Chicago, Ill.  
Peerless Fdry. Co., Indianapolis, Ind.

**Ridging**

Globe Iron Roofing & Corrugating Co., Cincinnati, Ohio  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.

**Roofing Cement**

Connors Paint Mfg. Co., Wm., Troy, N. Y.  
Lastik Products Corp., Pittsburgh, Pa.

**Roof Flashing**

Globe Iron Roofing & Corrugating Co., Cincinnati, Ohio  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.

**Roof Paints**

Connors Paint Mfg. Co., Wm., Lastik Products Corp., Pittsburgh, Pa.

**Roofing—Iron and Steel**

Globe Iron Roofing & Corrugating Co., Cincinnati, Ohio  
Milcor Steel Co., Chicago, Ill.  
Mil., Canton, Chgo., LaCrosse, K. C.  
Newport Rolling Mill Co., The, Newport, Ky.  
Republic Steel Corp., Youngstown, Ohio  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Roofing—Tin and Terne**

Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.  
Republic Steel Corp., Youngstown, Ohio  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Rubbish Burners**

Hart & Cooley Mfg. Co., New Britain, Conn.

**School—Sheet Metal Pattern Drafting**

St. Louis Technical Institute, St. Louis, Mo.

**Schools—Warm Air Heating**

St. Louis Technical Institute, St. Louis, Mo.

**Screws—Hardened Metallic Drive**

Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.  
Parker-Kalon Corp., 200 Varick St., New York

**Screws—Hardened Self-Tapping, Sheet Metal**

Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.  
Parker-Kalon Corp., New York

**Screens—Perforated Metal**

Chicago Perforating Co., Chicago, Ill.  
Harrington & King Perforating Co., Chicago, Ill.

**Scuppers**

Aeolus Dickinson, Chicago, Ill.

**Shears—Hand and Power**

Interstate Machinery Co., Chicago, Ill.  
Marshalltown Mfg. Co., Marshalltown, Iowa  
Peck, Stow & Wilcox Co., Southington, Conn.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.  
Viking Shear Co., Erie, Pa.  
Yoder Co., The, Cleveland, Ohio

**Sheet Metal Screws—Hardened, Self-Tapping**

Parker-Kalon Corp., New York

**Sheets—Alloy**

Inland Steel Co., Chicago, Ill.  
International Nickel Co., New York, N. Y.  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.  
Newport Rolling Mill Co., Newport, Ky.  
Republic Steel Corp., Youngstown, Ohio  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Sheets—Black and Galvanized**

Granite City Steel Co., Granite City, Ill.  
Inland Steel Co., Chicago, Ill.  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.  
Newport Rolling Mill Co., Newport, Ky.  
Osborn Co., The J. M. & L. A., Cleveland, Ohio  
Republic Steel Corp., Youngstown, Ohio  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Sheets—Copper**

American Brass Co., Waterbury, Conn.  
Revere Copper & Brass Inc., Rome, N. Y.

**Sheets—Iron**

Granite City Steel Co., Granite City, Ill.  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.  
Newport Rolling Mill Co., Newport, Ky.  
Republic Steel Corp., Youngstown, Ohio  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Sheets—Copper Bearing Steel**

Inland Steel Co., Chicago, Ill.  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.  
Newport Rolling Mill Co., Newport, Ky.  
Republic Steel Corp., Youngstown, Ohio

**Sheets—Nickel**

International Nickel Co., New York

**Sheets—Pure Iron Copper Alloy**

Newport Rolling Mill Co., Newport, Ky.

**Sheets—Special Finish**

Inland Steel Co., Chicago, Ill.  
Newport Rolling Mill Co., Newport, Ky.  
Republic Steel Corp., Youngstown, Ohio

**Shingles and Tile—Metal**

Globe Iron Roofing & Corrugating Co., Cincinnati, Ohio  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.  
Shingles and Tile—Metal  
Globe Iron Roofing & Corrugating Co., Cincinnati, Ohio  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.

**Skylights**

Globe Iron Roofing & Corrugating Co., Cincinnati, Ohio  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.

**Snips**

Peck, Stow & Wilcox Co., Southington, Conn.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Snow Guards**

Berger Bros. Co., Philadelphia, Pa.  
David Levow, New York, N. Y.  
Rival Strap Corp., New York, N. Y.

**Solder**

Kester Solder Co., Chicago, Ill.  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Solder—Acid Core**

Kester Solder Co., Chicago, Ill.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Solder—Rosin Core**

Kester Solder Co., Chicago, Ill.

**Solder—Self-Fluxing**

Kester Solder Co., Chicago, Ill.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Soldering Furnaces**

Diener Mfg. Co., G. W., Chicago, Ill.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Soot Destroyer**

Saginaw Salt Prod. Co., Saginaw, Mich.

**Specialties—Hardware**

Diener Mfg. Co., G. W., Chicago, Ill.

**Stars—Hard Iron Cleaning**

Fanner Mfg. Co., Cleveland, Ohio

**Stove Pipe and Fittings**

Meyer & Bro. Co., F., Peoria, Ill.  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.

**Stove and Furnace Trimmings**

Fanner Mfg. Co., Cleveland, Ohio

**Strainers—Roof**

David Levow, New York, N. Y.  
Rival Strap Corp., New York, N. Y.

**Straps—Ornamental Pipe**

David Levow, New York, N. Y.  
Rival Strap Corp., New York, N. Y.

**Tinplate**

Granite City Steel Co., Granite City, Ill.  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.  
Republic Steel Corp., Youngstown, Ohio

**Tools—Tinsmith's**

(See Machines—Tinsmith's)

**Torches**

Diener Mfg. Co., G. W., Chicago, Ill.  
Ryerson & Son, Inc., Jos. T., Chgo., N. Y., St. L., Det., Cleve.

**Unit Air Conditioners**

Armstrong Furnace Co., Columbus, Ohio  
American Fdry. & Furnace Co., Bloomington, Ill.  
American Furnace Co., St. Louis, Mo.  
Dall Steel Products Co., Lansing, Mich.  
Henry Furnace & Fdy. Co., Cleveland, Ohio  
Health-Air Systems, Ann Arbor, Mich.  
Hess Warming & Ventilating Co., Chicago, Ill.  
Lennox Furnace Co., Marshalltown, Iowa  
May-Fieberger Co., Newark, Ohio  
Meyer Furnace Co., Peoria, Ill.  
Motor Wheel Corp., Lansing, Mich.  
Payne Furnace & Supply Co., Beverly Hills, Calif.  
Waterman-Waterbury Co., Minneapolis, Minn.  
Williamson Heater Co., Cincinnati, Ohio

**Vacuum Cleaners—Furnace**

(See Furnace Cleaners)

Baker Furnace Co., Toledo, Ohio  
Brillion Furnace Co., Brillion, Wis.  
Denamore & Quinlan Co., Kenosha, Wis.

**Ventilators—Ceiling**

Hart & Cooley Co., New Britain, Conn.  
Henry Furnace & Fdy. Co., Cleveland, Ohio  
Independent Reg. & Mfg. Co., Cleveland, Ohio

**Ventilators—Floor**

Aeolus Dickinson, Chicago, Ill.

**Ventilators—Roof**

Aeolus Dickinson, Chicago, Ill.  
Berger Bros. Co., Philadelphia, Pa.  
Burt Mfg. Co., Akron, Ohio  
Jordan & Co., Paul R., Indianapolis, Ind.  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.

**Wood Faces—Warm Air**

Auer Register Co., Cleveland, Ohio  
Milcor Steel Co., Mil., Canton, Chgo., LaCrosse, K. C.

Say you saw it in AMERICAN ARTISAN—Thank you!



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*A Powerful  
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 Man Furnace  
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**\$135.00**  
 COMPLETE  
**GRAND RAPIDS**  
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**BETTER HUMIDIFIERS**  
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 Compound lever handle—re-  
 movable blades. Upper blade  
 away from mechanic enabling  
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*Roof Cement—Stove Putty  
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 Why daily more manufacturers are adopting  
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**"SIMPLEX"**  
 Truly Automatic—

**PERFORATED METALS**



All Sizes and Shapes of Holes  
 In Steel, Zinc, Brass, Copper, Tinplate, etc.  
 For All Screening, Ventilating and Draining  
**EVERYTHING IN PERFORATING METAL**  
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Mention AMERICAN ARTISAN in your reply—Thank you!

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# Classified Advertising

## BUSINESS CHANCES

**Lightning Rods**—Dealers who are selling Lightning Protection will make money by writing to us for our latest Factory to Dealer Prices. We employ no salesmen and save you all overhead charges. Our Pure Copper Cable and Fixtures are endorsed by the National Board of Fire Underwriters and hundreds of dealers. Write today for samples and prices. L. K. Diddle Company, Marshfield, Wis.

## HELP WANTED

**Manufacturers' Agents**  
Wanted to sell our furnace cement, roofing paint and cement and calking compounds. Our consistent trade paper advertising is creating demand. Exclusive territory given with liberal commission. Address W-538, AMERICAN ARTISAN, 139 N. Clark Street, Chicago, Illinois.

Wanted—Reliable, industrious sheet metal worker between 35 and 40 years of age, fully capable of handling any and all kinds of shop and outside work, fan suction and exhaust systems, skylights, cornices, ventilation and roofing jobs. Must be willing and able to do in and outside jobs from start to finish. References from last two employers. State least wages for nine hour day and don't apply unless you are sure of yourself and thoroughly experienced in all branches of sheet metal business. Address A-541, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Ill.

## SITUATION WANTED

Situation Wanted—By tinner. Good all around man on gutters and furnace work. Steady and reliable. Prefer Chicago or vicinity. Call GARD, Mansfield 9132, or write M-540, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

Situation Wanted—First class tinner and furnace man. Capable at layout and pattern cutting. Over twenty years' experience. 37 years of age, have good habits, and am in good health. Please state full particulars. Address J. D. Grace, Box 175, Elmer, Missouri. O-540

Situation Wanted—Would like to hear from a good firm that is in need of a young dependable business man in the hardware line. Address P-540, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

Situation Wanted—Would like to hear from furnace company. Have been foreman of fitting factory for twenty years. Can make tin and galvanized elbows for 2c, pipeless casings complete for a dollar, better safety pipe for 1c a foot, and can case furnaces with hood complete for 50c. Have a new safety pipe design that beats anything on earth. Will work on percentage basis. Address X-540, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

Wanted—A good opening for plumbing or plumbing and hardware man in town of 1,000 to 4,000. County seat preferred. Not too much competition. Iowa, Wisconsin, or Southern Minnesota preferred. Address D-540, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

## SITUATION WANTED

Situation Wanted—By all around tinner and sheet metal worker. Can handle any branch of the trade, cornice, skylights, ventilation, hot air heating, and can make estimates, sell, and run the shop on paying basis. Prefer job with some good hardware company or job shop. Will go any place. Address Z-540, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

Situation Wanted—By first class tinner making a specialty of warm air heating. Can do all estimating and make blueprints. Can draft patterns and make all fittings. Also some sales experience. Address J. H. Dennick, Juda, Wisconsin. H-541

Situation Wanted—As manager of heating and repair department with some live, growing warm air heating firm or a well rated sheet metal firm desirous of installing a real heating department. Fifteen years experience in every phase of the work, gravity, fan, and Air Conditioning systems. Address B-541, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

Situation Wanted—An experienced tinner and furnace man is open for a job along these lines. Can also do plumbing. Hardware clerk and general all around man. Can give satisfaction. Iowa preferred but will go anywhere. Reasonable wages. Address E-541, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

To A Wide Awake Manufacturer—Wanted, position as salesman for furnace manufacturer that has a reasonably priced line. Can assure a good amount of business in Illinois and Wisconsin. Can do that if I first have a furnace that is priced right and proper terms. Second, will put one third more time in than would be necessary when business was normal. Then when business gets back to normal—which is only around the corner—we would have the jump on the other fellows that are asleep on their feet. Address D-541, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Ill.

## SITUATION WANTED

Situation Wanted—By first class sheet metal worker of long general experience in cornices, heating and special work. Understand blueprints and pattern cutting. Neat and accurate on shop work. Healthy and A-1 habits. Address with particulars F-541, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

Situation Wanted—By a first class tinner and sheet metal worker, experienced in warm air heating, pump and windmill work. Best of references. Address G-541, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

Situation Wanted—By an A-1 all around sheet metal worker experienced in all branches of the trade. Also experienced in plumbing work. Excellent references furnished upon request. Address C-541, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Ill.

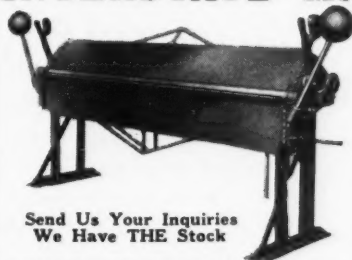
### Wanted

By furnace salesman to sell either jobber or dealer. Record as a producer. College graduate, ten years' experience. Address J-541, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

Situation Wanted—Have had 30 years' experience in all branches of the trade. Shop foreman in our shop 16 years. Good draftsman. Read plans readily and estimate from same. Have 8 foot Cornice brake, bench and hand tools, 1½ ton truck. Will go anywhere. Please let me hear what you have. Address K-541, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

Situation Wanted—By first class tinner and sheet metal worker. Can do plumbing and heating and all kinds of shop work. Address O-541, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

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We Have THE Stock

130 S. Clinton St., Chicago

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60" Nia. Power Slip Roll.....	\$250.00
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The INSTITUTE has specialized air conditioning courses for Forced Warm Air Plants, also large Mechanical Systems, etc. It is the ideal thing for Shop Owners, their Sons, Partners, etc., to prepare NOW to be good Salesmen later. Please indicate your desires:

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This is our 22nd year for Training Tradesmen, like yourself. Full information is free; check your Course, and write today. Get in line for Fall business recovery.

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- ☐ Heating Ventilating Engineering.

- ☐ Special Warm Air and Forced Air Heating.
- ☐ Air Conditioning for Fan H. & V. Eng.
- ☐ Contracting and Estimating.

THE ST. LOUIS TECHNICAL INSTITUTE 4543 CLAYTON AVE. ST. LOUIS, MO.

Mention AMERICAN ARTISAN in your reply—Thank you!

**SITUATION WANTED**

Situation Wanted—By mechanical building worker. Will go anywhere and will take job for a long or short period of time. Have had thirty years experience on cornice, skylight, blow pipe, and general jobbing. Am considered a first class layout man and am a good estimator. Have handled men and done layout and estimating for the past 15 years. Am willing to take any job you can give me. Address L-541, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

Situation Wanted—By a reliable sheet metal worker. Will go anywhere and will take job for a long or short period of time. Have had thirty years experience on cornice, skylight, blow pipe, and general jobbing. Am considered a first class layout man and am a good estimator. Have handled men and done layout and estimating for the past 15 years. Am willing to take any job you can give me. Address L-541, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

Situation Wanted—Have had 28 years experience as tinner and plumber. Am qualified to do repairing and work in the following lines: auto radiator repairing, putting up steel ceilings, pump and windmill repairing, steam and hot water work, installing radios, and any kind of a mechanical job that comes in a shop. Can give good references. Address F. C. Blewett, Dodgeville, Wisconsin. M-541

Situation Wanted—By married man as sheet metal worker and plumber. Can handle heating of all kinds. Can estimate and figure jobs. Nothing but steady job considered. No Boozer. Address P-541, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

**SITUATION WANTED**

Situation Wanted—By sheet metal man of twenty years experience. Have held positions of Superintendent and Executive in large firms. Thoroughly competent in general jobbing, furnace work, oil heating, factory work, manufacturing of furnace fittings, metal stamping, and sales work. College education. Only high class proposition with reliable firm considered. Location no object. Address R-541, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

**TOOLS AND MACHINERY**

For Sale—Cheap. One 30" square shear, or will trade for 8' or 10' Chicago Steel Cornice Brake. Address Earnest Rehbein, c/o Lee & Radtke Hardware Company, Baraboo, Wisconsin. R-540

For Sale—A complete set of sheet-metal worker's tools. Will sell all, or part. Cheap if taken at once. Address S-540, AMERICAN ARTISAN, 139 North Clark Street, Chicago, Illinois.

For Sale—Set of tinner's tools. Consists of 8 foot steel brake, 30 inch square shears, 30 inch bar folder, slitting shear, bench tools, etc. All in good condition and priced to move at once. Address E. Haverstock, Rt. 7, South Bend, Indiana. Y-540

**BOOKS**

The Revised Edition of the New Metal Worker Pattern Book by Kittridge and Associates is one book that should be in every shop. As a reference book alone it is indispensable. Over 500 9x11-inch pages with 895 illustrations. It covers the principles underlying practically every problem that is likely to come up in daily practice. Beginning with the selection and use of drawing tools, the author explains linear and geometrical drawing so clearly that one who has

**BOOKS**

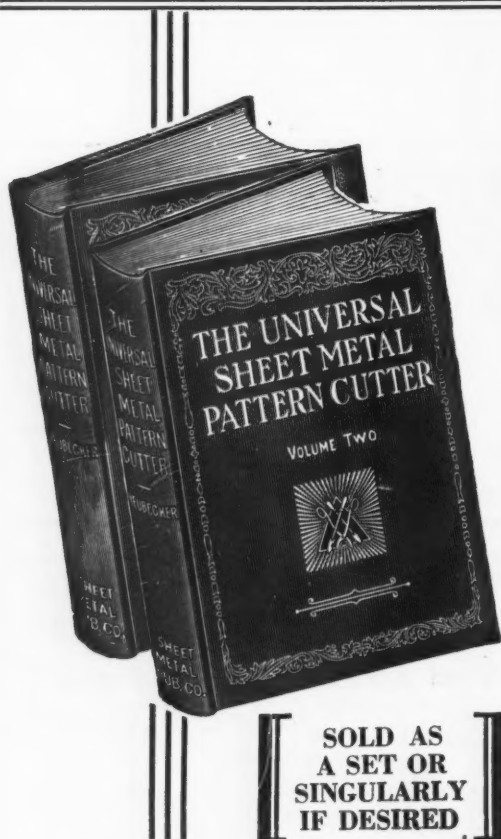
bad no previous knowledge of arithmetic or drawing may understand these essentials and apply them. The most approved methods of pattern cutting are also given in the course of the work... Price, \$6.00, postpaid. Order from the Book Dept., AMERICAN ARTISAN, 139

Exhaust and Blow Piping, by Hayes—Exhaust and Blow Piping has had an unusually big demand. A fresh supply is now off the press and is in our hands for immediate delivery. It has an invaluable treatise on the planning, cost, estimation and installation of fan piping in all its branches, giving all necessary guidance in fan work blower and separator construction. 159 pages, 5x8. 51 figures. Cloth. \$2.00. Order from Book Department, AMERICAN ARTISAN, 139 N. Clark St., Chicago, Illinois.

Here are the two books that most sheet metal workers and contractors classify as the most complete books on Sheet Metal Pattern Cutting. The Universal Sheet Metal Pattern Cutter, Vol. 1, deals with every phase of inside work, including Heating, Ventilating, Blower and Exhaust Piping Connections, Marine Sheet Metal Work, Automobile Sheet Metal Work, Machinery and Belt Guards, etc., Mensuration applied to Sheet Metal Work, etc., with many features of construction and Labor-Saving Methods are also given in detail.

Vol. 2 deals with every form of Outside and Architectural Sheet Metal Work. A treatise on Drawing, Full Size Detailing and Lettering, Construction of Cornices, Skylights, Molding, Copings, Electrically Illuminated Signs, etc.

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SINGULARLY  
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They'll save you many hours and dollars in time and labor. 780 pages of detailed information on better methods of pattern making, drawing, and lettering. Sheet metal working in all fields, automotive and architectural. A full and practical outline on estimating. Everything you need.

**500 SHORT CUT DEMONSTRATIONS  
OVER 7000  
NEW-UP-TO-THE-MINUTE METHODS  
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# True Talks

with successful sheet metal men

SERIES No. 1

NUMBER 7

## PROMINENT TOLEDO FIRM HAS SPECIALIZED IN MONEL METAL WORK FOR YEARS...

Has many successful industrial and domestic installations to its credit...



Mr. A. H. Lumm, whose good salesmanship counts as being every hour made A. H. Lumm, Inc., one of Northern Ohio's most successful sheet metal concerns.

Here's a flourishing Toledo sheet metal concern whose success has been built on the bedrock of fine craftsmanship, fast, dependable service, fair prices and a thorough knowledge

which realizes that material is just as important to the success of any installation as design and workmanship.

Whenever a job requires equipment that must combine great durability with rust-immunity, corrosion-resistance, cleanability and at the same time must present an attractive appearance, A. H. Lumm, Inc., specifies Monel Metal. The company prefers Monel Metal to other materials which lack one

of what's the best material to use for every job. Here's another firm



Modern daylight shop of A. H. Lumm, Inc., Toledo, O.

or more of Monel Metal's vital properties. And Lumm has found that this policy pays well.

Although this contractor uses Monel Metal for a wide variety of industrial equipment, such as chemical and food processing units, it has also found this modern Nickel alloy particularly suited to household equipment...sinks, table tops, range hoods and cabinet tops and shelves, for example. Some of the best looking Monel Metal kitchen equipment in Toledo has come out of the modern Lumm shop.

As for profit on Monel Metal equipment—you can take a look at these pictures of the Lumm plant and draw your own conclusions!



Monel Metal scale pans in process of fabrication at A. H. Lumm, Inc. These pans are specified where contamination and corrosion are factors, as in food packing and chemical plants.

Monel Metal is a registered trade name applied to a technically controlled nickel-copper alloy of high nickel content. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

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**MONEL METAL**

NICKEL ALLOYS PERFORM BETTER LONGER



THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

YOU CAN SELL

**HEALTH-AIR**  
*Warms in Winter - Cools in Summer*

## CONDITIONING UNITS THE YEAR AROUND

*... at a price that the average homeowner  
can afford to pay; a nice profit to yourself...*

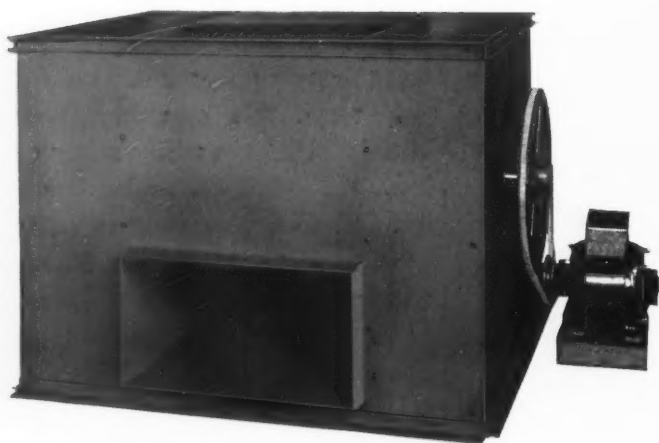
### HEALTH-AIR CONDITIONER

This Conditioner combines into one compact unit, air washer, blower and humidifier. In summer it cools and in winter it circulates pure, humidified, washed air "throughout the house. It equalizes heat within three degrees between ceiling and floor.



### HEALTH-AIR BLOWER

Delivers full rated C.F.M. Gives comfort summer and winter. Equalizes the temperature in every room. A fuel saver. Forces heat to the "hard-to-warm" rooms. Nine sizes. Equally efficient on old and new installations.



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This unit sends the heat into the house instead of up the flue. It will save 20 to 40% on fuel consumption when attached to any heater with high stack temperature. Pays 50 to 100% on the investment. Easily installed at a good profit.

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